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Food for Thought: A Case Study of Eating
From Dumpsters

By: Irena R. Lambrou

Accepted in Partial Completion of the
Requirements for the Degree Master of Arts

Kathleen L. Kitto, Dean of the Graduate
School

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Master's Thesis

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Irena Lambrou

July 16, 2014

Food for Thought: A Case Study of
Eating From Dumpsters

A Thesis Presented to the Faculty
of Western Washington University

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July 2014

Abstract

At least 40% of food is wasted in the USA and comprises a significant portion of landfills. That wasting food is accepted practice in 2014 contrasts with changes since 1900 and during both world wars when the US government enacted hygiene standards but also encouraged elimination of waste. Bellingham is a city in northwestern Washington in which many businesses recover and redistribute “wasted” food. There are substantial donations to the local food bank of foods that cannot be sold and foods are also gleaned from local farms. Additional recoverable nutrition is in trash dumpsters. Recently published literature on “dumpster divers” describe who participates but there is little on the types and quantities of foods recovered. The goal here is to determine who participates and what kinds and quantities of foods are recovered.

Flyers describing the research and requesting volunteers were distributed at the local “Alternate Library”. Snowball sampling was attempted. Data were collected by personal observation and for participants by survey, journal and dietary recalls. Few provided detailed data. Participants were almost exclusively middle class males, often students between ages 18 and 30 years, aligning with “freegan” traits. Eaten foods still reflect cultural norms for what is edible. Dumpster diving may be stigmatized due to hygiene norms for all but young males who view it as adventure and protest. People most in need of caloric supplementation may not want to risk the negative attention.

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Dr. Joan Stevenson, my committee chair: Thank you for your patience. To say that you have seen many students through this process is an understatement. I know that, at times, it may have felt like pulling teeth to get me to finish this paper (also an understatement). I will forever be indebted to you for your tough love, advice and encouragement along the way. You have helped me to see my fullest potential as an academic and as a person, in addition to helping me write a sane, intelligent, logical paper.

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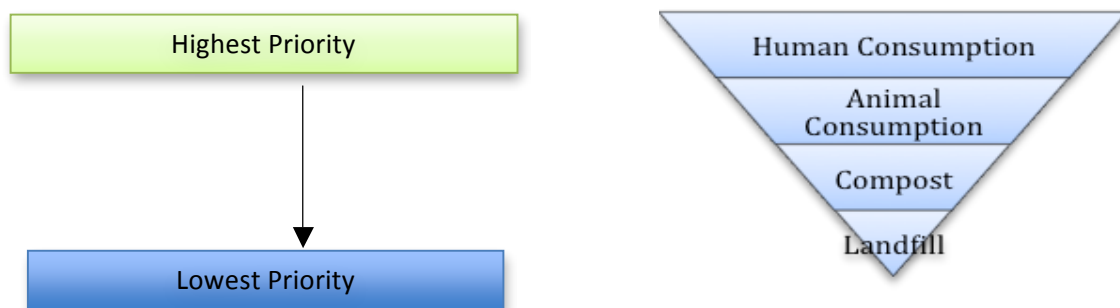
Chapter 1 Introduction: Waste Not, Want Not: Decisions about Edible Foods in Dumpsters

Food fulfills one of the three basic human needs. Food is also one of the most important aspects of how we define culture. In America, food waste constitutes the largest portion of our landfills (Pierce 2012). Some attributed this excess to over-consumption and has directly resulted in environmental degradation and ecological strains (Bloom 2009; Pimentel 1990) as well as social inequality, in terms of access to nutritious foods (Edwards and Mercer 2007; Hawkins & Muecke 2003; Hawkins, 2001, 2006; Pothukuchi and Kaufman 2000; Scanlan 2005; Thompson 1979). Food waste has been defined as food that someone has declared unfit to sell for consumption, and is therefore moved from the food distribution system to the trash disposal system; or has simply let remain unused or neglected until it is unfit for human consumption is still suitable for human consumption (Gunders 2012). However, early in this trajectory the food may still be fit for consumption but the transition from edible to inedible is culturally constructed (Douglas, 1966) and in the USA there are two factors that determine what is labeled inedible: businesses that benefit from limited access to foods and health concerns about preventing the spread of disease. The business of food, on a general, basic level, works in response to supply and demand; therefore aligning what constitutes edible, sellable food with the standards of the populations creating the demand and willing to pay the price. The US government and local health care communities protect the public by providing standards of what is safe to eat (preventative strategies to limit food borne illness and standards that ensure freshness and help maintain food quality). The goal here is to argue that food waste should be recovered and used in ways that reduce hunger. Dumpster foods represent a missed opportunity (Jones 2006, 2004). My research demonstrates that social status and hierarchy contribute significantly to why food continues to be discarded, emphasized by the fact that some individuals are willing to retrieve this resource after it has entered the dumpster.

This thesis explores the motives and thought processes of the individuals who are willing to recover foods from perceived filthy unhygienic settings such as dumpsters. What are the motives of individuals who “dumpster dive”? It is socially unacceptable in the

USA to retrieve edible foods from trash containers because of concerns about disease. To clarify, this thesis focuses on organic matter, specifically in the commercial arena, once viewed as trash that is salvaged from areas designated for waste and accepted once again as a form of human sustenance (dumpster diving); as opposed to food that is salvaged before it enters the waste stream (donation or low-cost groceries). Essentially, regardless of the negative connotations associated with the trash, some individuals risk degrading themselves in terms of dirt to access free food, which is evidently abundant and edible in dumpsters across America. In terms of this paper, I define the terms food waste and discarded foods as matter that was once deemed food, but has found its way into the waste stream due to standards of business and hygiene, which is then salvaged by folks who are still willing to eat it; the implication of this retrieval is in the fact that people are willing to eat what is deemed unacceptable, risking their reputation and health, but ultimately they are eating better than lower socio-economic status populations who purchase food via culturally accepted means (such as grocery stores). To be clear, when I speak to food waste or discarded foods, I am

Figure 1



not speaking to foods fit for other organisms in the animal kingdom, nor foods fit for compost (see Food Hierarchy, EPA 2002, adapted in Figure 1).

The focus here is on foods that are considered inedible and discarded into trash bins including: fully wrapped and packaged items, items still within freshness date, overproduced food items that take up too much space, food items—the actual item or packaging—may be bruised or dented (Pimental 1990). Messer (2007) defines edible food as “all items recognized for their nutritive or additional dietary values, which are ingested via the mouth, swallowed and then digested,” and inedible, or non-foods, as “organic or inorganic items that nutritionists or members of particular cultures do not recognize as food because of sensory

unattractiveness, anticipated negative physiological effect, predominantly non-nutritive properties, or culturally determined dislike or disgust,” (53). The latter definition of inedible foods validates how embedded in culture are what constitutes edible foods (Douglas 1966).

Eating trash is not acceptable in the USA and the occurrence of this recovery effort indicates the existence of a malnourished underclass (Carolsfeld and Erikson 2013; Vaughn 2011; Black 2007; Mintz and Du Bois 2002)). Recovering food from dumpsters is likely viewed by most as unusual and minimally socially embarrassing. Unstated assumptions likely include characterizations of “dumpster divers” as unconcerned about disease or nutrition because they are so desperate to acquire food they will eat disgusting likely disease-borne foods. Salvaging food, or trash once it has reached its final destination, is considered to be acts by people who represent an economically unsuccessful, lower class (Black 2007).

Another argument is that waste represents control of the supply and demand for food and thus, is a thriving moneymaking business for acquiring wealth in the USA (Carolsfeld and Erikson 2013; Eikenberry and Smith 2005, Flanagan 2003). Discarding food limits what is available and contributes to higher prices in the marketplace. US values are evident in that recovery of food from waste receives little or no attention whereas dumpster diving to feed the hungry is considered aberrant (Nguyen et al. 2014; Donovan 2012, Vaughn 2012, Stuart 2009).

The nature and history of food waste in the USA will be reviewed briefly first followed by consideration of the acceptability of food waste in the USA. There are recovery efforts in place and dumpster diving is a less socially acceptable micro-effort on behalf of those efforts

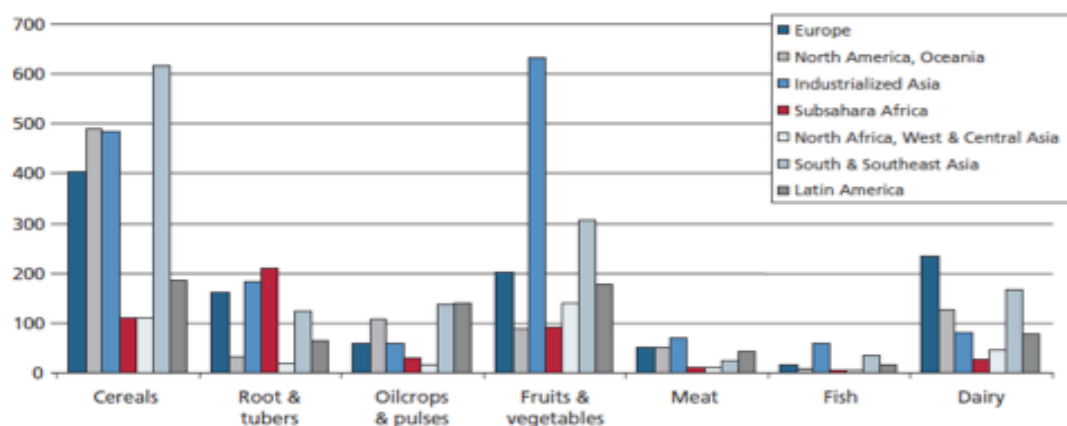
Regardless of the excess amounts of edible food in America’s dumpsters, the price people pay for discarded (free) food is potentially ruining their reputation due to the deep rooted structural origins associated with eating trash (Carolsfeld and Erikson 2013; Vaughn 2011; Black 2007). Salvaging food, or trash once it has reached its final destination, will always be associated with societies that lack abundance, or simply with primitive societies (Black 2007); to see the practice of salvaging food from dumpsters in a complex nation of the

global north has been described as an effect of industrialization and globalization (Mintz and Du Bois 2002). Although America can be thought of as a country built on the principles of supply and demand, many claim that America's economy thrives on waste; others further argue that there are populations boycotting capitalism and living off that waste (Carolsfeld and Erikson 2013; Donovan 2012, Vaughn 2012, Stuart 2009; Eikenberry and Smith 2005, Flanagan 2003). Curiously, the negative consequences of food waste have no weight in our culture accepting the deviant behavior of eating trash, even if salvaging wasted food generates a viable source of calories and nutrients. The following introduction elaborates on food waste in America, after which I will address the main question of this thesis: why is it acceptable to waste food in America? And perhaps more importantly, why has nutritional analysis of edible trash, a scientific exploration of socially deviant behavior, been neglected in research on this topic?

Food waste in America is approximately 40% of available food (Hall et al. 2009). Bloom (2011) argues that poor distribution is at the root of the problem; he contends that Americans waste enough food to fill the entire Rose Bowl on a daily basis, but we lack the infrastructure to collect and distribute this excess to people that could benefit from it, assuming the food is edible and in its original form. In 1998, U.S. food waste accounted for 12% of municipal solid waste, or commonly known as domestic waste (Gunders 2012; Parfitt et al. 2010). The USDA estimated that if America wasted 15% less, we would be able to feed 25 million people; instead this food is fed to our landfills (Gunders 2012).

Production Volumes of each commodity group, per region (million tonnes)

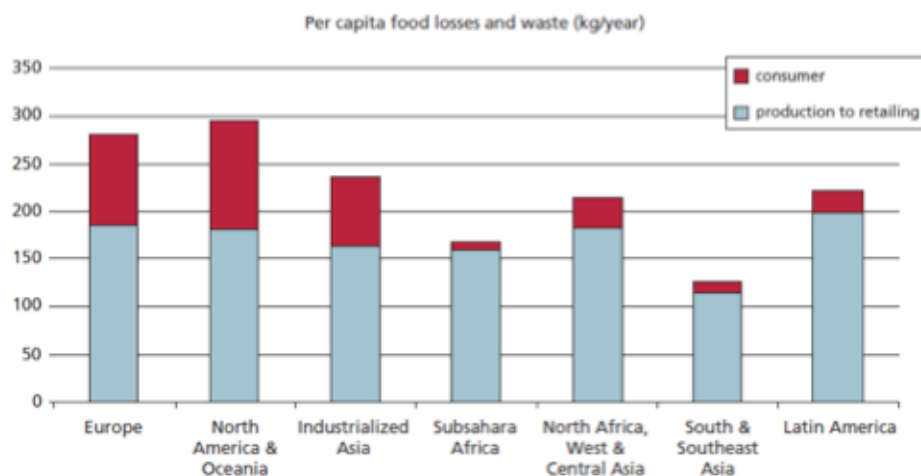
Figure 2



Source: Food and Agriculture Organization of the United Nations, 2011, Gustavsson, J., Cederberg, C., Sonesson, U., van Otterdijk, R., & Meybeck, A.; Global food losses and food waste. Food and Agriculture Organization of the United Nations, Reproduced with permission.

Per capita food losses and waste, at consumption and pre-consumption stages, in different regions

Figure 3



Source: Food and Agriculture Organization of the United Nations, 2011, Gustavsson, J., Cederberg, C., Sonesson, U., van Otterdijk, R., & Meybeck, A.; Global food losses and food waste. Food and Agriculture Organization of the United Nations, Reproduced with permission.

The culturally acceptable practice of placing edible foods into the trash is an expensive choice beyond the loss of the value of the foods discarded. There is the associated management of the waste and pressures on local ecologies (Hall et al. 2009; US Dept. of Energy; Agency USEP 2009; Forster et al. 2007; Gunders et al. 2013a). Transporting waste uses 300 million barrels of oil per year. There is also the dilemma of what to do with the 33 million tons of landfill that produces methane gas. The USA imports 80% of its food and costs associated with importation of food also drive up the costs of wasting food (Weatherspoon et al. 2013; Pierce 2012; Sallis and Glanz 2006; Drenowski 2005; Kant 2000). Disposal of excess food in the U.S. accounts for an estimated \$750 million annually, a loss of monetary capital and represents gross energy inefficiency that contributes to environmental degradation (Royte 2012; Gunders et al. 2013a). According to Seifert (2010), food waste reduction would save approximately \$136 billion from transportation costs and \$59 billion in food stamps. Additionally, overall pollution rates would drop by approximately 10% and there would be 25% more freshwater available if USA salvaged even half of its food waste (Seifert 2010; Gunders et al. 2013a).

It seems a worthwhile effort from both environmental and economic perspectives to attempt to salvage wasted edible food to salvage edible food before it becomes waste and there are a number of organizations and programs to do just that (Morenoff 2002). Zero Waste campaign creates tax cuts for food donations. Food Banks and Food Not Bombs collect and redistribute excess grocery store food before it goes to waste. The table below organizes national food recovery strategies by organization, affiliation, objectives and details about the program and/or legislation. In an attempt to encourage the redistribution of perishable food donations, in 1996 President Bill Clinton signed the Bill Emerson Good Samaritan Food Donation Act to protect businesses and organizations from legal liability that might arise from their donations due to the risk of contamination of food and the possibility of illness. These laws called for critical examination of food recovery programs and gleaning projects in order to maintain safety and quality standards of food donations during transport and storage (USDA 1996). Good Samaritan Food Donation laws provide protection to participating retail stores in addition to the existing federal protection (USDA 1996).

In 2014, the socially acceptable practices of salvaging and redistributing edible food in America include: food donations and pick-ups from grocery stores and retail locations, Food Banks, post-harvest gleaning on farms that are sent to donation centers, etc. The Environmental Protection Agency (EPA) has created the Food Donation Challenge to help further the extent of food waste recovery and redistribution, donating 230 million pounds of prepared food since 1992. Table 1 speaks to a number of existing food assistance programs in America that utilize surplus food, prepackaged or donated excess food, to people in need of nutritional assistance:

Table 1: Recovery Strategies			
Organization, Program	Affiliation	Objectives	Details
Office of Waste Reduction http://www.epa.gov/epawaste/basicinfo.htm	A department regulated by the US Environmental Protection Agency (EPA)	Protect us from the hazards of waste disposal Conserve energy and natural resources by recycling and recovery Reduce or eliminate waste Clean up waste, which may have spilled, leaked, or been improperly disposed.	Separates waste into hazardous and non-hazardous. Food, listed under non-hazardous waste, recommended to be composted.
Feeding America http://feedingamerica.org/	The nation's leading domestic hunger-relief charity.	Feed America's hungry through a nationwide network of member food banks and engage our country in the fight to end hunger.	Organized local chapters of Food Banks
Food Not Bombs	A national organization with local chapters that collects food donations from grocery stores and feeds the hungry once/week	Donates food to the hungry	Based on Vegan ethics and peace rather than war.
The Emergency Food Assistance Program (TEFAP) http://www.fns.usda.gov/tefap	Redistribution of surplus food	Provide nutrition assistance to low-income persons. Eligible recipients must be a type of organization distributing meals or household consumption During situations of emergency or relief, food distributed to organizations providing food for needy, primarily food banks, food pantries, soup kitchens and community action agencies	Origin of this program: Surplus food Difficult Economy Required provisions: Storage standards (same as ERAs) *Clearly ID USDA foods *Maintain inventory system *Annual physical inventory/reconciliation *Beginning and ending dates of contract * Insurance *Consent to inspection/inventory

Table 2 lists the food donation organizations that offer local chapters nationwide, accepting non-perishable and unspoiled foods:

Table 2: Food Donation Organizations	
ORGANIZATION	WHAT THEY DO
Cooperative Extension Service (CES)	Establishes local hunger programs through diverse agencies and community-based groups; promote food safety, proper nutrition and food recovery programs
Foodchain (FC)	Founded 1992. Found in 40 states, complies with food safety and donation guidelines. In 1997, distributed 150 million lbs of food to 12,000 agencies.
Farm Service Agency (FSA)	Each state has one designated staff member to coordinate field gleaning activities
Second Harvest (SH)	Nationwide network of food banks; largest charitable hunger relief organization in the country.
Society of St. Andrew (SOSA)	Leads field gleaning organization, rescues over 20 million lbs of fruits and vegetables per year that would otherwise be discarded.
From the Wholesaler to the Hungry (WH)	Large-scale, systematic distribution of fresh fruits and vegetables to low-income people.

Another example of uneaten (but still edible) food recovery is the Zero Waste Campaign, headed by Holly Elmore, whose pilot project recruited Hartsfield International Airport to donate all packaged foods to a local Atlanta orphanage. In return, the airport received a tax break of over an estimated \$100,000¹ in 2012. According to Feeding America, in light of programs such as the Supplemental Nutrition Assistance Program (SNAP), The Emergency Food Assistance Program (TEFAP), and Commodity Supplemental Food

¹ <http://zerowastezone.blogspot.com/>; personal communication with Holly Elmore, October 2012

Program (CSFP) that continue connect low-access, food insecure populations with food donations, hunger still prominently exists in the U.S. and programs. When food is no longer suitable for human consumption in terms of food and health laws, this resource can still be used as animal feed (i.e. unaesthetic cereal pieces that fall off the assembly line and are swept into a large pile on the floor at cereal factories could go to animals) (Godfray et al. 2010; Parfitt et al. 2010).

Thus, there are efforts to redistribute wasted food, but food waste on a national level continues to be a large component of landfills (Gunders et al. 2013a; Hall et al. 2009; Agency USEP 2009; Forster et al. 2007; Kantor 1997). In a study of over 250 commercial food retailer companies that asked why dump edible food instead of donate, an overwhelming 80% responded because of fear of potential liability from ingested food (Morenoff 2002). However, fear of liability does not create waste, it merely is an excuse in a cultural of convenience. Therefore, food waste redistribution programs apparently have relatively small impact.

Food found in dumpsters fills a large portion of America's landfills (Hall et al. 2009) and represents an opportunity to decrease waste. Curtis (1997) argues that the privatization of food assistance programs moves responsibility of food redistribution to the private sector and views poverty as a situational emergency rather than a permanent problem for individuals, which partly explains why hunger and malnutrition exist in tandem with the abundance of food waste. Gunders (2012) provides a process for more efficient ways to alleviate food waste in the supply chain, by enlisting businesses, government, and consumers to each do their parts. The lack of attention to this issue is explained as too expensive because it would require "a record keeping system cataloging all of a food's attributes", including wasted food, (Golan et al. 2004:5; Parfitt et al. 2010). Food cataloging may be the means to trace foods still under the control of the businesses selling the food but are more than is required for safety (Golan et al., 2004). There will be 9-10 billion people by 2050 and recovering wasted foods may be the most cost-effective means to improve nutrition worldwide (Gunders et al. 2013).

In terms of food recovery programs and efforts, the focus of this thesis is to explore an aspect of the micro-effort known as Dumpster Diving (DD) (Vaughn 2012; Moré 2011). Dumpster diving continues as a fringe activity due to many factors. First, by mainstream health standards one could argue it is unsanitary to eat from a dumpster, and therefore the food (or trash, depending on your view) is inedible. Second, the smell of dumpsters is not always pleasant; therefore the threshold of one's senses in regards to what is appetizing can vary greatly between individuals: some people see and smell unappetizing trash, others edible food. Third, the word waste carries its own negative assumptions associated with discarded matter (Donovan 2012; Moré 2011). In 2014 dumpster diving is considered as a risky tactic because of concerns about hygiene (Gunders 2012; Vaughn 2012; Trienekens and Zuurbier 2008; FAO 2002) and nutritional quality (Radimer et al. 2002; Riches 1997) when folks access trash as a source of food. The fringe activity questions mainstream perceptions of edibility, health concerns and business practices (Nguyen et al. 2014; Clark 2004). The hypotheses of this thesis are that: 1) food recovery by dumpster divers is still constrained by cultural expectations about what constitutes edible versus inedible foods, and 2) that those participating in "dumpster-diving" are consciously challenging social norms. Their trips to dumpsters are acts of rebellion in addition to trying to reduce the waste that characterizes USA.

The supporting literature on dumpster diving, including marginalized populations and freegan populations, emphasizes the narrative data that is predominant in existing qualitative data studies (Edwards and Mercer 2007; Eikenberry and Smith 2005). The supporting literature lacks dietary journals and/or nutritional analysis of what participants consume. For example, due to a recent increase in consumer counter-movements, the subculture best known as *freegans* are slowly surfacing in academic research (Moré 2011; Fernandez et al. 2011; Barnard 2011; Ferrell 2006; Gross 2009; Edwards and Mercer 2007; Clark 2004; Eighner 1991). Dumpster diving has become more apparent since 2000, with urban dwellers and college students alike partaking in claiming America's spoils (Edwards and Mercer, 2007; Tumblin 2002). Freeganism describes an alternative-to-capitalism lifestyle, which includes dumpster diving (searching through retail, residential, construction dumpsters, etc.)

to collect discarded items that may still be of use including both food and inorganic items; therefore these individuals choose to eat from dumpsters and speak openly about it (Fernandez et al. 2011; Portwood-Stacer 2012; Ernst 2010). Victoria Moré (2011) explored the dumpster diver lifestyle, or freeganism, in Illinois by documenting recovered foods through participant observation. She expanded the understanding of dumpster diving, depicting it as a means of recycling and of reducing waste. Even with the incentives to salvage and redistribute retail waste, Moré (2011) states that store owners could do more to redistribute excess food waste if they were not so concerned with possible legal risks, as well as creating a clear policy with employees regarding food that is thrown out and potential problems with theft. A similar study sampled a small group of individuals who engaged in dumpster diving in rural Oregon, exemplifying their re-use of overproduction as well as the political, anti-capitalist undercurrent driving freeganism (Gross 2009). Eighner (1991), a self-proclaimed dumpster diver who completely lives off trash, reflects on his life, his choices, and the community at large in to contextualize the excess of waste he accesses for survival. Eighner's (1991) account is somewhat quantitative as he does include quantifiable lists of dumpstered items (whether food or non-food), but due to the focus on cultural stigma associated with dumpster diving this remains as a socio-cultural commentary rather than a rigorous quantitative analysis.

MacClancy et al (2007) focuses on a multitude of variables connecting food choice and edibility of non-conventional foods, (geophagy, eating boogers, cultural food preferences), in order to show the cross-discipline application necessary to study food and nutrition (bio-anthropology, cultural anthropology, sociology, psychology, etc). As MacClancy et al. (2007) calls for a rigorous interdisciplinary study of nutrition, specifically nutritional viability that may not come from conventional foods, I chose to include in my research a food diet journal to evaluate nutritional quality of dumpstered foods in addition to participants compiling dive lists that are quantifiably measured. In the spirit of bridging the gap between the cultural and biological fields of anthropology, I also chose to include an ethnography of methods, background informational surveys, as well as informal interviews conducted with dumpster diving freegans.

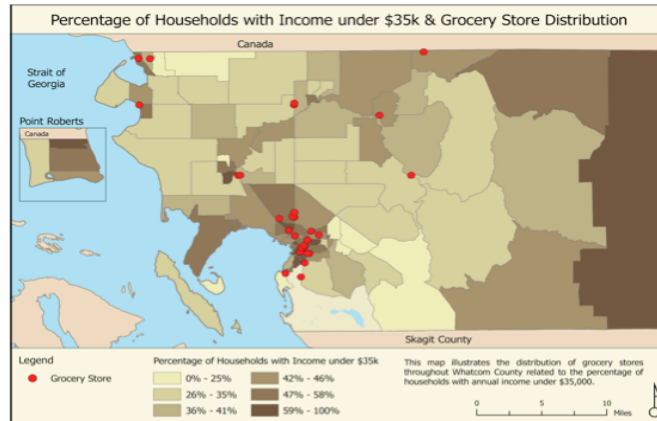
I employ mixed methods to question motives and perceived successes of dumpster divers in their quest to reclaim discarded trash as a viable food source, whether or not it is hygienic or appetizing depends on the consumer (the person ingesting the food). The research site is situated in Whatcom County, in the city of Bellingham, Washington. Bellingham has been recognized for its efforts in sustainability with a strong emphasis on zero waste (Long and Peterson 2013; Hiyane-Brown 2012). In terms of food, Bellingham's Food Bank ranks as one of the top food banks in the nation, redirecting food unwanted food from farms, restaurants and grocery stores to both Bellingham and surrounding counties' food bank: 15% of all families in the Bellingham city limits use the food bank at least once a year; 60% of food bank families skip or cut the size of meals on a weekly basis; and every month the Bellingham Food Bank donates over 225,000 pounds of food².

This commitment might indicate that there would be less hunger, but in 2000, 20% of Bellingham's population was below the poverty level³ (see Appendix IX). Figure 4 below maps the low-income households relative to the location for grocery stores. The goal here is to draw attention to the potential foods recoverable from the central downtown area of Bellingham, WA, which has access to many grocery stores.

² http://www.bellinghamfoodbank.org/about_us

³ <http://www.co.whatcom.wa.us/health/pdf/brffs-survey.pdf>

Figure 4



These food maps have a number of important implications for this CFA. Rural residents (those living in unincorporated regions of the County, accounting for 44% of Whatcom residents) are most likely to have convenience stores as their closest place to purchase food. Similarly, east-County residents who do not have a car and rely upon public transportation have a long way to travel to reach a grocery store.

Farm stands are abundant in Whatcom County, but access can be difficult for people who use public transportation; many farm stands are not located on bus routes. An example of this is the cluster of produce and farm stands on Northwest Avenue, north of Axton Road.

An anthropological perspective is crucial for this research as it allows the researcher to view cultural factors (marginalized behaviors, stigmas, and hygiene concerns that must be incorporated when analyzing food waste (Macclancy et al. 2007; Douglas 1966). Chapter One briefly outlines how America shifted from a nation of no waste before the Industrial Revolution to our current state of wasted edible food, with a focus on hygiene. Chapter Two frames this thesis within the anthropological framework of structural violence, expanding on theoretical implications of wasted foods in light of the perils facing food security (Godfray et al. 2010) and health problems related to diets lacking nutrient-dense foods (Drenowski and Spector 2004). Next, Chapter Three on research design is dedicated to my 2011-2012 case study. Next, Chapter Four will speak to the results of my case study. Chapter Five is an anecdotal account of my ethnographic fieldwork. Finally, Chapter Six will be a discussion of my local research within the greater context of food waste on a national scale, as well as concluding thoughts on food waste.

Chapter 2 Shifting Perceptions of Cultural Norms

“Control oil and you control nations; control food and you control the people.”

Henry Kissinger

The historical context of America between 1880 and 2012 demonstrates the key role political economy plays in influencing prevailing cultural norms. This chapter highlights specific changes in cultural norms and behaviors that took us from early industrialization to the present. During this period, a political shift occurs from a more laissez-faire government, emphasizing the individual, towards more government interest in the public's health practices that directly influences American cultural norms concerning food (Tomes 1988; Covello and Mumpower 1985). The transformation towards a more vested governmental influence on food and hygiene illustrates how American values transitioned from viewing a transition a culture that considered hygiene a matter of personal assessment to government controlled hygienic standards, food safety and privatization of agriculture and waste management (Nestle 2013; Melosi 2005; Sapp and Bird 2003; Harris 2002; Strasser 1999). Smith and Phillips (2000) assert that the modern food system, specifically in terms of food policy making and regulation, cannot be studied nor understood without taking history into account.

As this chapter shows, cultural norms and behaviors dramatically influenced political economic currents, as I will account for in the following time intervals: 1880's-early 1900's, World War I through 1929, the Great Depression through World War II, and lastly Post-World War II to 2012. Perhaps most germane to the following chapter on history is the critical examination of America's consumer culture in its growing acceptance of and reliance on convenience (both in terms of the food industry and trash/sanitation) (Sassatelli 2007). Due to current norms molded by consumerism and convenience, people who eat edible, nutritious food from a dumpster are stigmatized as deviants (Heath and Potter 2005), regardless of the nutritional benefits they access or the (often unintentional) alleviation of the growing quantity of food waste in America they create.

The goal of this chapter is to explore the specific cultural norms that categorize dumpster diving as a deviant or socially unacceptable social behavior. Although it will not be

discussed in further detail, I cannot ignore the evolution and impact of the medical field in regards to hygiene (i.e. foundation of American Medical Association in 1847 and standard education of medical school, business of hospitals and health care, etc.) (Fidler 2001). Western medicine could arguably be linked to prevailing cultural norms and behaviors in terms of nutrition, however, this chapter emphasizes changing cultural norms and behaviors for food and hygiene to demonstrate how shifting cultural perceptions of hygiene and sanitation have impacted food waste trajectories. As current cultural norms dictate what is food, distinguishing fit to eat from fit to sell, I argue is a result of evolving business and health practices, which at the turn of the 20th century differ greatly from present norms.

Industrial Revolution-1914

Between 1880 and 1910, many people moved into city centers to find employment as America underwent industrialization (Carter et al. 2006). The Industrial Revolution forced a shift from a laissez-faire government, one with minimal intervention in an individual's life to an increase in government control of many aspects of society, specifically when the well-being of individuals was concerned (Covello and Mumpower 1985). As previously noted, the American Medical Association greatly influenced public perceptions of what constitutes acceptable foods. With western medicine generating greater awareness of the need for hygiene, the U.S. government quickly forms regulating bodies to better the health of Americans. In terms of food, this is illuminated by the establishment of the U.S. US Department of Agriculture (USDA) and Inspection Service (FSIS) in 1862, the governing body that regulates raw vegetables grading, raw fruit grading, meats poultry, eggs (processing and grading). In 1906, the Food and Drug Administration (FDA) is established to regulate all food, excluding meat, drugs (over the counter and prescriptions), dietary supplements, cosmetics, medical devices, bottled water, seafood, wild game, eggs in shell. Given these newly established administration offices, food production and practices in America slowly shift to more government intervention in an effort to emphasize overall health safety and better hygienic practices.

At the turn of the 20th century, 41% of America's workforce was employed by agriculture, which was labor intensive and took place on small-diversified farms. (Dimitri, Effland and Conklin 2005). Individuals are responsible for the health of self and family. The government played no role in what constituted adequate nutrition, most healthy foods or good health, which would be introduced circa 1918 (Koch and Sprague 2014). Chain grocery stores had yet to be established, therefore, vitamin-rich fruits and vegetables were hard to come by, adding to the working class' lack of health (Jacobs and Shipp 1990). Accustomed to hunger and strife on a daily basis, the American working class lived sparingly, enduring long, difficult working conditions, with the ever-present fear of communicable diseases (Ware 1990). With the constant presence of hunger, food was not wasted; every morsel was used (Strasser 1999). The following tips exemplify the no-waste attitude from this era: feed domestic animals compost from urban slop pails and use spent tealeaves to clean the floor. The concern for hygienic practices rose with the climbing numbers of mortality due to tuberculosis, measles, and other diseases (Tomes 1988). Specifically regarding food, food production and praxis came under great scrutiny after Sinclair's questioning of food safety in the infamous, fictitious account of America's food industry, *The Jungle* (1908).

In addition to the individual's responsibility of accessing food, trash disposal was also individually accounted for on a household level (Melosi 2005; Louis 2004). There were no sanitation services in cities. The cultural norms of reuse and recycling reflected this individualism (Knowlton 2001). The Industrial Revolution produced much more industrial waste, and therefore urban centers began to output higher volumes of glass and paper products (MacBride 2011). Additionally, rural aspects were still woven into urban centers at this time; for example, some cities housed 3,000,000 horses as draft animals, each horse producing approximately 50 pounds of manure and 22 gallons of urine daily⁴. The environmental conditions only added to the stress of immune systems of the working class who already was already experiencing harsh conditions (Roots 2000; Tomes 1988).

⁴ <http://www.washacadsci.org/capsci08/presentations/Philsoc.haapala.pdf>

World War I - 1929

The initial spark of globalization is highlighted by the “Golden Age” of agriculture from 1910-1914, during which exports increase America’s economy (Dimitri, Effland and Conklin 2005). Fresh with technological advancements, such as the railroad, telegraph, steam, and steel mill, America’s industrial spirit created new avenues to raise capital more efficiently (Ehrenreich 1985). The following segment will outline how, historically speaking, the fluctuations of America’s economy impacts the cultural norms and behaviors. By 1914, over 60% of Americans are employed in non-agricultural jobs (Ehrenreich 1985).

World War I was America’s first attempt at global warfare, and engaging in a war abroad can oftentimes be draining; not only are supplies shipped across the sea to support troops, but so are men, especially during this war when soldiers were only men. For example, the war casualties resulting from warfare take a toll on the nation’s economy due to the sheer loss of the workforce demographic (Huelfer 2003). Therefore, with a drain on the workforce and supplies, President Hoover’s Thrifty Food Plan (1917) urged Americans to save more and waste less food. With taglines such as “Save a loaf a week, fight the war at home,” and the popularization of the term “Hooverizing” to describe food rationing, the notion to salvage is an accepted norm (Carruth 2008; Eighmey 2005). During WWI, the United States Food Administration (1917-1919) is created to encourage rationing and salvaging. Federal policy and agenda is to conserve (Rockoff 2004). However, this trend of conservation will soon be forgotten with the new economic theory of John Maynard Keynes that increased deficit-financed spending would secure a strong economy as opposed to reducing production: hence the birth of modern US federal economic policy rooted in capitalism (Rockoff 2004).

After America’s victory ending WWI, US economy is boosted due to increased trade with European nations (Brandes 1997). This new global market, specifically between the U.S. and European nations, meant that salaries increased for American workers and leisure time increased⁵; the emerging new “middle class” class began to distinguish itself from the Industrial working class. To illustrate the shift in perception in regards to the accepted norms

⁵ Henry Ford raises wage rates from \$2.40 per 9 hours to \$5 per 8-hour shift; from <http://corporate.ford.com/news-center/press-releases-detail/677-5-dollar-a-day>.

of hygiene and food pre-WWII to post-WWI, salvaging food as was accepted pre-Industrial Revolution will be replaced by the notion of health and food safety: “the housewife should consider no method economical which threatens the health,” emphasizing that saving and salvaging was a thing of the past (Elliott 1907:116).

While food norms remained relatively consistent from WWI to 1929, cultural norms for hygiene continued to evolve, as the initial threat of communicable disease Pre-WWI drew attention to the need for urban hygiene; Post-WWI US is associated with a greater political involvement food safety as well as a privatization of sanitation services (Melosi 2005). This concern for hygiene as a public issue could be result of a number of culminating factors, one of which would be the 19th century discovery of germs which led to the germ theory, the theory that some diseases are caused by micro-organisms (Vaughn 2011; Melosi 2005). The demand for more control of food production standards followed Sinclair’s (1908) attack on lack of hygiene criteria in food processing (Roots 2000). In addition, due to increased industrial processing techniques (chemicals⁶, industrial waste, sewage, etc.), more inorganic waste materials made their way into the environment, prompting more attention to keeping environments clean (better air, water and soil quality) to protect human health and ecological health (Strasser 1999; Covello and Mumpower 1985). Following these concerns, government intervention on hygiene as a social issue proved beneficial with a major decrease in communicable disease and morbidity, exemplified by the fact that life expectancy at birth in 1900 was 41.3 years and in 1925 had risen to 59 years⁷.

To summarize, WWI-1929 experienced advancements in technology, a boost in economy following the WWI, and citizens witnessed a taste of a leisurely lifestyle. Due to increasing industrialization and rapid advancements in technology, we can trace the shift from an agrarian economy to an industrial state in terms of food production, health and safety: roller mills, mechanized slaughtering, pasteurization, and ice-refrigeration (Page 1996). Although wartime economic strategies encouraged saving and salvaging techniques, the 1920’s are often associated with carelessness and fun exemplified by tagline the Roaring ‘20s,

⁶ It is not until 1949 that the FDA publishes guidance for consumers in: “Procedures for the Appraisal of the Toxicity of Chemicals in Food” (FDA, 2014: <http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm238505.htm>)

⁷ <http://www.washacadsci.org/capsci08/presentations/Philsoc.haapala.pdf>

prohibition and Speak Easy's, and a lucrative economy that allows heavy investing in the stock market; nutritious food became a standard at this time, as government began to take interest in the economical benefits of consumerism in terms of food production (LaFrance 1999). By 1929, government oversees food and health safety, with the rise of safety standards by employing the technology mentioned above, but the notion of saving food was not present during the 1920's. The norms regarding discarded food would revert to those more similar to those of the wartime economy when the stock market plummets.

Great Depression-World War II: Commoditization and Privatization

The Great Depression, from the stock market crash of 1929 through WWII, marks a destitute era for America with the rapid rise of famine and unemployment (Aspray et al. 2014). Franklin D. Roosevelt proposes the first New Deal in 1933 to help the country out of the economic depression, promising to stimulate the economy by generating employment (Dimitri, Effland and Conklin 2005). The wartime economy of America's participation in WWII in 1939 ends the economic depression and will mark the advent of a dominant middle class. Both the Great Depression and WWII call for utilitarian practices of food (growing one's own garden, saving food to fight the war at home), but there is a concurrent theme of food moving towards more packaging for distribution as well as cleanliness and hygiene standards that reflect WWII standards. The following section will demonstrate how the 1930's and 1940's plant the seed the following section on consumerism and convenience.

During the 1930's, the prevailing cultural norms moved from food as an individual concern to a critical responsibility for government to ensure food for all Americans; therefore, given the urgency of circumstances, the perception of food shifts away from nourishment and towards an economic commodity. This is key as now food is regarded as a variable of supply and demand. Due to widespread famine during the Great Depression, food became a political issue and the government became responsible for providing citizens access to food, as President Roosevelt persuaded his country to cultivate "freedom from want," (Roots 2000; Friedmann 1993; Rockwell 1943). During 1930's the U.S. government pushed for a surplus of commodity crops (Aspray et al. 2014). The goal was two-fold: generate a more abundant

harvest, as well as creating extremely durable food sources (great for processing) (Nestle 2013). Harvesting one crop, or monocropping, will lead a decline of small, family farms as large, privatized agriculture increases (Hanson et al. 2008). At the time, monocropping seemed beneficial: President Roosevelt's New Deal farming programs used higher crop yield to generate surpluses to feed a starving nation (Nestle 2013). Unfortunately, this new reliance on commodity crops, such as wheat and corn, will lead to consequences in the near future for the US, specifically in agricultural and health sectors to be discussed in a later section.

Smith and Phillips (2000) attach the label "popularization of science" to the late 1930's, as the U.S. enters WWII scientific research replaces individual knowledge and discernment of food choice. For example, Apple (1996) narrows the era of science-based nutrition by focusing on the implementation of vitamins to supplement America's war effort. Propaganda advertised the importance of one-a-day vitamins since food lost nutrients during cooking and modern processing techniques (Pollan 2008; Tomes 2005). In 1938, the Federal Food, Drug, and Cosmetic Act⁸ replaces the 1906 Food and Drugs Act, requiring labels for processed, packaged food to contain the name of the food, its net weight, the name and address of the manufacturer or distributor; a list of ingredients is required on certain products. The law also prohibits statements in food labeling that are false or misleading. Due to technology from Industrial Revolution, food lost many nutrients during processing. For example, white bread once full of whole grains, vitamins and minerals, once the steel meal was introduced the wheat germ was lost during processing and the flour bleached for aesthetic purposes; once science came along, it was refortified with vitamins and minerals (Pollan 2008). Curiously, profits generated from advising consumer food choice roots governmental authority on what was safe and nutritious to eat in consumer purchases (Heasman and Mellentin 2001). Regardless of the process or the fact that foods must be refortified after being stripped of original nutrients, consumers continue to purchase the safe commodity of food sold to them in pretty packaging without question. WWII era sees science partaking in food processing, working to create more nutritious food out of durable crops. The norm is that food is not only a commodity, but now it is part of science and a substance

⁸ FDA.gov (2014) U.S. Department of Health & Human Services / U.S. Food & Drug Administration

to be controlled and modified by government. The behaviors that follow are in less importance placed on growing food; individuals become disconnected from food sources; and the beginning of convenience (fortified, canned, durable become consumer choices).

During World War II, the concern of providing citizens and soldiers overseas with quick, affordable nutrition gave rise to a norm of food as a convenience, which is highlighted by a rise in commercially canned, freeze-dried, and pre-packaged food (Carlson and Frazão 2014). This new norm of convenience replaced the earlier cultural norm of food as nourishment. Packaging and preservatives further the norm of convenience as producers and consumers alike look to for foods that have a prolonged shelf life and easy transport. Although the need to transport food abroad to soldiers demanded convenience, folks at home engaged in civic agriculture. Towards the end of WWII, 40 percent of the nation's food was supplied by the 20 million Victory Gardens planted throughout American cities (Dixon 2010). These gardens, also known as war gardens, made fresh produce affordable during a time of economic hardship, and improved American nutrition as well as providing nationalistic cohesion (Lawson 2014; Hynes 1996).

With greater government control of food and sanitation providing better health, the cultural norm of individuals accepting more and more government influence and sanction on hygiene continued, reflected in new cultural behaviors. Hoy (1996) indicates how attitudes and behaviors are the main driving forces behind America's shift in perspective towards hygiene. Behaviors that illustrate the more stringent hygienic standards accepted as a cultural norm are as follows: sanitation services were accepted among urban dwellers, therein creating a commoditizing trash; domesticated urban animals, along with their slop pails, became obsolete (Strasser 1999; Hoy 1996). Specific examples heightened awareness of hygiene are traced through many avenues of society: sanitation reform as part of Civilian Conservation Corps (CCC) circa late 1930's; vaccines to eradicate communicable disease; and a call to uniformity and cleanliness among citizens during the wartime economy (Strasser 1999).

1945 -1975

From 1945-1975, the dominant cultural norms regarding food and hygiene during this time are unrecognizable compared to those at the turn of the century. The Cold War embodies the national agenda post-WWII, situating America's food and hygiene norms within the political and military tension between America and the former Soviet Union strive to outcompete one another: militaristically, economically, and scientifically. Although the Cold War involved no field combat, the psychological effects of the political tension on America's consumer culture were monumental. The cultural norms regarding the concepts of food and hygiene during this time are highly attuned with the political agenda of the Cold War: as America and the former Soviet Union compete in global terms of production, consumption, technology and medicine, American consumers strive to compete through material culture, and conspicuous consumption replaces norms of resourcefulness associated with developing nations or lower socioeconomic statuses (Black 2007; Sassatelli 2007; Strasser 1999; Cowan 1976). The consumer culture of 1950's accepts, without question, the new form of corporate, privatized agriculture that government subsidizes and maintains in order to sustain the caloric needs of the baby boomer generation (Toossi 2002). Thus, the negative consequences of the New Deal surpluses of the 1930's begin. The commodity crop surpluses that were so beneficial during the Great Depression will become chronic surpluses post-WWII.

The theme of shifting norms of more government control of food, food as a commodity, can be traced in Table 3. I start the table with the New Deal in order to show when and why America began generating surpluses, and trace how these surpluses continued throughout the 20th century as a means to stimulate global markets for America. This table also lists legislative dates to support my argument that government has a greater hand in health, food and agriculture as the 20th century progresses, as well as the fact that US agro-corporations are rooted in US farm subsidies to generate commodity crops.

Table 3: 20th Century Policymaking, Food and Agriculture

Year(s)	Event(s)
1933	New Deal introduced by President Roosevelt, employed 7-10 million Americans. Agro=Corporations subsidized to harvest commodity crops; surpluses fed Americans and stimulated economy with global food markets
1938	Food, Drug and Cosmetic Act: Corrected imperfections of 1906 Pure Food and Drug Act; specifically created a comprehensive set of standards by which food safety could be regulated
1939-1945	WWII
1941	Food and Nutrition Board established: set standard for Recommended Dietary Allowances (RDAs) as well as daily caloric and nutrient intakes, specifically targeting children's needs during economic depressions (Asmus 2010).
1947-1949	Marshall Aid: Economic aid to European countries. Marshall administrators minimize Agricultural dumping of US surplus food: 40% of Marshall Aid used for food and agriculture sent to Europe was in form of feedstuffs and fertilizer for agricultural reconstruction (Friedmann 1993)
Circa 1950's	<ul style="list-style-type: none"> Wheat surpluses imported in 3rd World Countries from US. Post WWII, 3rd world countries have become completely dependent on US imports, when only two decades prior they were fully self-sufficient agriculturally. Replacement of sugar with High Fructose Corn Syrup, made possible by maize surplus (Friedmann 1993; Kloppenberg 1984).
1964-1975	Vietnam War
1962	Codex Alimentarius: Established by the FAO and WHO to act as an overarching organization for policymaking regarding food on a global level (Trienekens and Zuurbier 2008).
1964	Food Stamp Act: gave USDA full coverage of regulation and protection of populations facing poverty (Dimitri, Effland and Conklin 2005).
1965	Food and Agricultural Act: created four year commodity programs of grains and cotton (Asmus 2010; Dimitri, Effland and Conklin 2005; Hardin 1978)
1967	<ul style="list-style-type: none"> Food Meat Inspection Act (FMIA) Originally enacted in 1906, amended in 1967: Wholesome Meat Act wherein FMIA requires USDA to inspect all sheep, cattle, swine, goats and horse when slaughtered and processed for human consumption, and the sanitary conditions under which they are conducted. (Covello and Mumpower 1985). Fair Packaging and Labeling Act (FPLA): regulations requiring that all "consumer commodities" be labeled with: net contents, identity of commodity, and name and place of business of the product's manufacturer, packer, or distributor (FDA 2014).
1973	US Farm Bill to help farms in debt; regardless, farm debt more than tripled in the 1970s in the US
1975:	General Accounting Office (now the Government Accountability Office, GAO) issued a report on spoiled

<i>Table 3: 20th Century Policymaking, Food and Agriculture</i>	
Year(s)	Event(s)
	and stale foods, therefore addressing the need for date labeling system.
1979:	Office of Technology Assessment (OTA) published a comprehensive report regarding consumer's concern of food freshness. OTA was an office of Congress from 1972-1995
1980	US Exports of grain and feeds are eight times what they were in the 1970s.
1987-1991	US gave over \$708 million in subsidies for Soviet purchases of Wheat (USDA 1991).

In the next paragraph, I will demonstrate how government influences consumer choice with nutritional counsel with underlying economic incentives (Heasman and Mellentin 2001). Underlying economic incentives can be traced in Table 3, as the progression of commoditization of food and globalization steadily increase throughout the 20th century. Initially, the general nutritional counsel post-WWII is to eat more meat (Conner et al. 2000; Kenney et al. 1991). These guidelines, based on research gathered during WWII on the “protein gap,” which compared the health of first world nations with more access to protein to third world countries lacking enough of that macronutrient (Smith and Phillips 2000). During this timespan, we see a proliferation of large-scale cattle lots that peak in 1970; this illustrates the cultural norms of accepting the government advice on nutrition to eat more meat, and thus creates a higher demand for meat production (Conner et al. 2000; Kenney et al. 1991). Agro-food corporations began to rely heavily on animal consumption and durable foods to create profits. In the 1950’s and 1960’s there is a rapid increase in cardiovascular disease mainly due to increased animal fat consumption, as well as a decrease in physical activity (Moubarac et al. 2014).

With the advent of agro-corporations and an emphasis on commodity crops (namely soy, wheat, maize), the US undergoes what has been described as the “Second Agricultural Revolution:” the separation of livestock from cereals, allowing for specialization of hybrid maize and soy farms (Benson 2010; Conkin 2008). In the mid-1970’s, the Nixon

administration⁹ urges the US citizens to consume more commodity crops (Bertrand et al. 1983; Gilmore 1982). Moreover, the Secretary of Agriculture under the administration of President Nixon encourages growing the overproduction cheap food¹⁰, paving the way for overproduction of low-cost foods that are easy to replace and to discard. To specify, these three crops could generate thousands of food possibilities, thus creating durable foods. Durable foods, or foods manufactured out of generic ingredients (i.e. high fructose corn syrup and hydrogenated vegetable oil both come from corn), increase the availability of substitutions (Friedmann 1993). Consequently, this will eventually lead to dependence on these substitutions and health problems over the next forty years (Johnson et al. 2007). The US government chooses to subsidize commodity crops since they yield high crop surpluses. In order to increase consumer purchasing of commodity crops, the regulating food safety regulation agencies use scientific facts (such as benefits of diets low in saturated fats found in animals) to emphasize the need to consume more whole grains; shortly thereafter, commodity crops quickly replace red meat in production (Muller et al. 2007; Cordain 1999). By focusing on commodity crops, meat consumption drops off significantly in the 1980's as well as a major decline in small-scale local farms (Kronstad 1997).

In regards hygiene from late 1950's to 1970, the standards for sanitation on the level of food production, distribution, and retail are elevated. In 1962, the U.S. Public Health Service (USPHS) distributed the Food Service Sanitation Manual outlining food safety regulations to prepare for inspection. In 1967, the FDA Hygienic standards are under close control, as food inspection are regularly carried out in accordance with the FDA; consumers drive the demand more stringent standards as for more sterile, packaged, clean, sanitary foods rise¹¹. The rise in awareness of food in terms of microbiological safety brought about the current U.S date labeling system that was based on consumer interest; by late 1960's food is considered a consumer commodity (FDA 2014); and by the late 1970's supermarkets adopt freshness date labeling (Gunders et al. 2013). Due to the changing landscape of the political agenda in regards to food from 1945-1975, cultural norms regarding these variables

¹⁰ http://www.yale.edu/sustainablefood/S9256YSF_farm_bill_s.pdf.pdf

¹¹ <http://www.foodsafetymagazine.com/magazine-archive1/december-2003january-2004/inspections-part-1-the-professional-sanitarian/>

emphasizes acceptance of guidelines and rules set forth by the government. The standard behavioral traits to portray these cultural norms are as follows: the norm is to buy more, encouraged by politics and corporate agriculture, as there is no longer a stress placed on salvaging or saving food. Therefore, hygiene is now used as a rationale to have government policy support market based consumerism.

1975-1990

The end of the Vietnam War, the Civil Rights movement, and the introduction of Reaganomics (promoting free market economy and a reduction of government regulation) are major markers for this time. The cultural norm of convenience suggests that every middle-class American household should have the modern “luxuries” of convenience made possible by technology (i.e. television, car, microwave, dishwasher), which furthers the mainstream belief food as a commodity and access to consumer choice should be part of the built-in costs of convenience (Belk and Pollay 1985). Although cultural norms regarding food ebb and flow generationally especially in regards to national agenda, the general norms surrounding hygiene and consumerism in regards to food from 1975-1990 view food as a disposable commodity, one that is regulated with specific rules and regulations set forth by the government (Carolsfeld and Erikson 2013).

After over forty years, America and many other countries have now become dependent on the commodity crop surpluses (Friedmann 1993). Therefore, although there is no longer a need for commodity crop production, the demand of synthetic substitutions continues to be fulfilled with the surpluses from cheap, durable monocrops (Heller 2013). With the interwoven dynamics of the global food market, the term ‘food sovereignty’ is coined in Mexico in the 1980’s: “a set of legal norms and practices aimed at transforming food and agriculture systems;” it will become a major mobilizing frame for social justice movements continuing into the 1990’s (Edelman 2013). In light of the debut of food sovereignty, genetically modified crops and pesticides are becoming a norm at the height of corporate agriculture in the 1980’s. Accordingly, 10% of all pesticides used in agriculture to achieve high cosmetic/aesthetic standards by the late 1970’s (Pimental 1990). The FDA

falsely claims that use of pesticides is for safety, when no research supports this claim and on the contrary, some workers report presence of insects in food improves nutritional quality.

By 1987, households allocate 27% of their budget for eating out of the home, as compared to only 3% in 1909 (Jacobs and Shipp 1990). Food loss at the residential and commercial level (including restaurants and grocery stores) is valued at approximately \$50 billion by 1988 (Pimental 1990). This is due to the large growing middle class of the 1980s. Consequently, with Reaganomics ruling the political landscape of the 1980's, large cuts in Federal Aid funding adversely impact the urban poor due to loss of aid for food support programs (Smiley and West 2012; Mullings 1987). Therefore, policymaking directly results in a greater distinction in terms of access to food and nutrition between socioeconomic statuses.

Aligning with the theme of Reaganomics, trash collection becomes more privatized: four major corporations lead municipal trash collection by the mid-1980's, eradicating small, local trash agencies; two thirds of American cities were using private companies for waste collection by 1990 (Williams 2013). Between 1981-1983, the Reagan administration is determined to Environmental Protection Agency (EPA) of the deregulation advocates (Williams 2013). When the EPA regenerates after being dismembered, the Brooklyn Navy Yard Incinerator Project is under way: incinerate massive amounts of trash, regardless of the dioxin released in the process (Williams 2013). The increase in incinerators during the 1980's demonstrates the culture of convenience has become mainstream, and the privatization of trash and agriculture sectors will lead to leave the power in the hands of the consumer in the future. Coincidentally, the 1988 Supreme Court ruling of *California v. Greenwood* 486 U.S. 35¹² says that trash that is accessible is therefore free and open to the public to take.

1990- 2012

From 1995 to 2012, a heavy reliance on government guidance surrounding food: the Food Pyramid instructs healthy eating habits (Appendix II); packages on food include nutrition labels, expiry dates; and one purchases food from a store, or a farmer's, but there is

¹² <https://supreme.justia.com/cases/federal/us/486/35/case.html>

never a shortage of food in either of these places. Subsequently, the conventional American consumer has limited knowledge of knowledge of food, its source, or how to harvest, butcher, salvage, or preserve it; all of which was common knowledge at the turn of the last century. As we as a nation move farther away from an agricultural society and closer to industry and technology, American consumers increasingly rely on government guidance of food in terms of safety and edibility. The USDA and FDA are more and more stringent about using pesticides and packaging to create sterile environments to help prevent food-borne disease (Wulinger 1977), which the Center for Disease Control accounts for the hospitalization of roughly 128,000 Americans annually and results in an estimated 3,000 deaths¹³.

While government agencies promote standards of cleanliness and food safety to the mainstream US consumer, overproduction of cash crops by corporate agriculture creates unsanitary conditions that have resulted in their own creation of health issues that are overlooked due to political interests (Brown 2014). For example, contaminated water from big business cattle farms seeps into neighboring vegetation, creating food recalls due to, salmonella-infested spinach and tomatoes; or the use of antibiotics for unsanitary cattle conditions creates resistance to antibiotics for people (Allen 2004). The cultural norm of aesthetic perfection of food as a subset of hygiene deters consumers not only from salvaging bruised or aesthetically displeasing foods, but also from venturing out of the conventional box of what the FDA/USDA has issued as safe and edible. For example, why harvest the apples from your yard, when it is easier and perhaps even tastier to buy them. Merely a century separates the weak immune systems of the Industrial Revolution's working class and current weak immunity due, in part, to sterile environments and the genetically modified, aesthetically pleasing foods we ingest (Bloomfield 2013; Wright 2011; Stanwell-Smith 2001).

As of 2012, American food waste directly results from both the overproduction of food (Putnam 1999), the accepted standards for sanitation and hygiene, and the culture of convenience and consumerism (Marriott and Gravani 2006). A nation with stocked grocery stores and endless food supply begets wasteful behaviors when saving is no longer a part of mainstream attitudes. Accordingly, trash is put in a receptacle and disappears; trash

¹³ <http://www.cdc.gov/foodborneburden/>

compactors have become more commonplace, as incineration has seen a major drop off due to environmentalist efforts (Tangri 2003). Due to the historical precedent of disease creating a need for sanitation and better hygiene, Americans have adapted to worry less about what happens with our trash as long as it is conveniently contained out of sight and fosters sanitary living conditions. Unfortunately, privatized agriculture and waste management squander excess food that could potentially feed many people (Gunders et al. 2013; Hall et al. 2009). The norms of convenience and consumerism have supplanted the notion of food as nourishment, and consumers have relinquished much of their rights to food as food is now a commodity whose worth is determined by distribution endurance, presentation and aesthetic quality, and size/quantity (Bloom 2009). Convenience persuades consumers to rely on packaging, labels, and dates found on processed and genetically modified foods (Hamilton 2009). To recap, the primary behaviors that demonstrate the current prevailing cultural norms for food include hesitance to buy food after its pull date, not preserving or saving food, not making productive use of food scraps or leftovers, and a predilection for tossing and replacing (Gunders et al. 2013; Strasser 2009).

To summarize, the malpractice of unsanitary food production practices at the turn of the 20th Century led to a heightened awareness of clean, sterile environments (Moody and Vineyard 2007; Roots 2001; Sinclair 1906). In the 21st century, environmental and health problems stemming from malpractice in agriculture practices are overlooked due to the extreme level of political entanglement (Castro and Singer 2004; Guither 1980; Wulinger 1977). In 1917, Hoover's Thrifty Food Plan encouraged the public against wasting food specifically. In 2006, the USDA established a Thrifty Food Plan that guides low-income consumers to eat nutrient-dense foods on a budget (Cassady and Culp 2007). We have nutrition on how to lose weight bombarding us from every direction, but perhaps a general advocacy towards consuming less would be more beneficial—could this ever be possible in the current environment of consumerism? Lastly, the leading cause of morbidity during the industrial revolution was communicable disease. Today, the leading causes of morbidity in America are often largely nutrition or diet-related, such as diabetes, heart disease due to

excess consumption of calorically dense, nutritionally devoid foods (Carrero-Bastos et al. 2011; Frassetto et al. 2001).

Tracing the history of America's current acceptance of food waste lays the groundwork for the important shift in the cultural perception of edible food and acceptable methods in regards to containing and removing trash. The proceeding chapter on theory will be rooted in these important historical changes as the application of critical medical anthropology provides a useful critical lens for understanding why we accept the prevailing cultural norms of food waste and reject salvaging edible, nutritious food from the waste stream, which the culturally deviant behavior of dumpster diving illuminates.

Chapter 3 The Veil of Privilege Exposes Resources

“Why isn’t everyone Dumpster Diving?”¹⁴

As indicated in the previous chapter on history, prevailing cultural norms and behaviors are often reflective of, if not dictated by, social structures. Currently, individuals yield to government counsel in terms of sanitation and trash removal, hygienic standards, and consumer behaviors are rewarded. I frame food waste within the theory of structural violence (SV), which is defined as the inhibition of individuals to reach their fullest potential because of social structures (Farmer et al. 2006; Farmer 2004; Farmer 2003; Galtung 1969). By applying structural violence and critical medical anthropology (CMA), I assert social structures drive the accepted norms of consumerism and waste, while salvaging food in the face of excess is now viewed as a culturally deviant behavior. I employ critical medical anthropology and structural violence theory to ask why do we, as Americans, throw out food, that is edible, that is wasted, that could be eaten, and that could fight hunger?

My theoretical emphasis for this paper is CMA and SV, but I cannot ignore the importance of biological anthropology and evolutionary psychology on the subject of human behavior in regards to food choice (Valle et al. 2010). Ritenbaugh (1982:141) identifies eating as an intersection between biological and cultural conditioning: “Culture conditions the range of choices, but there is a biological feedback regarding the long-term suitability of any particular set of choices;” such as the example of fire, the feedback loop is closed with

¹⁴ Personal Communication with a Skagit Valley Co-Op clerk who approached me for a new Wednesday night dumpster dive community flyer. After telling him that my thesis was on the food waste stream, he asked me why people do not engage in dumpster diving when it is so plentiful and accessible (November 2012). This was a common question among the dumpster divers I interviewed, they were unaware of how their race and class standing contributed to their ability to engage in an illegal activity.

the cultural impact on biological evolution, expanding the long term suitability of many sets of choices. This feedback loop emphasizes that humans have evolved specific mechanisms to differentiate edible food from spoiled, rotting, moldy food (Curtis and Biran 2001). This evolutionary adaptation to avoid spoiled, discarded foods is part of the universal human emotion: disgust (Curtis et al. 2004). Even though disgust can keep you from ingesting harmful micro-organisms, there is a fine line of trial and error which allows humans to accept and benefit from some slightly fermented or molded foods (i.e. bleu cheese, yogurt, kefir, and Kombucha); this coincides with the salvaging of food before it enters the trash as described in the preceding history chapter. If the spectrum of disgust varies greatly across cultures (Curtis et al. 2004; Curtis and Biran 2001), America would be situated on the hyper-vigilant end as exemplified in everyday life: concealing trash in landfills, the slow disappearance of public water fountains. Thus, germ theory has generated an obsession out of the human expression of disgust that was once used as a survival method to protect humans from the micro-organisms in decaying food (Rozin et al. 2009; Moody and Vineyard 2007; Fine 2003). This hyper vigilant state of hygiene, once anchored in evolution and survival technique, is now “socially constructed and imposed” in terms of our perception of food standards and what delineates edible from sellable (Black 2007:147). In terms of evolution, it would be interesting to watch the human trajectory had *Homo Habilis* applied current hygienic standards in his attempt to scavenge food.

Thus, it is clear that food choice is both attributed to nature and nurture. If it is both culturally learned as well as evolutionary-based, two questions arise: (1) why would anyone choose to dumpster dive when clean, safe, edible food is available at the grocery store, and (2) why did I choose to situate my study within the frames of CMA and SV instead of biological anthropology theory? First, according to my study as well as the supporting literature, it is obvious that edible food is available in America’s dumpsters, which will be the working definition of food waste for this thesis: redirecting wasted food back into the edible food path via dumpster diving (Vaughn 2012; Black 2007; Singer 2004).

Second, SV reveals the layers of social structures associated with and illustrated by food waste: government control (hygiene and food safety regulations), political economy

(from social hierarchy, supply follows demand), as well as current cultural norms (stigma of germs as well as stigmatized behaviors). The theme of social hierarchy connects food waste to hunger in the USA due to the fact that the top individuals set up government regulations in our social order. We may interpret that government regulations are set by individuals at the top of the hierarchy, the privileged few who have access to agency and power that is used to control standards (Battilana 2006). The word stigma comes from the Greek root *stig*, which referred to the mark or tattoo to brand individuals negatively, to emphasize slavery, criminality or low social order (Stuart 2014). Therefore, stigma is always a negative association. If SV is best defined as a critique of social structures and institutions that inhibit individuals from fulfilling their highest potential, how are the preceding social structures, namely political economy and cultural norms, inhibiting individuals from reaching their fullest potential? To answer this question, I examine the concept of trash as food via dumpster diving in order to bridge the connection between health and nutrition within the context of socioeconomic status.

The field of medical anthropology, concerned with urgent health issues, encompasses the broader picture of medicine: how are pressing health issues related to or influenced by social organization and culture (Singer 2004; Brown 1998; Baer et al. 1997)? CMA, a subset of medical anthropology, focuses on “vertical links” to connect small case studies to the global picture, which demonstrates how health issues combined with differences in culture contribute to differences in behavior patterns, belief, attitude and emotion (Singer 2004:24; Mullings 1987). While defining CMA, Scheper-Hughes’ (1996) calls for a demedicalization of Western medicine, specifically the institution of hospitals, to empower individuals by emphasizing the social origins of illness in order to treating pathologies holistically. With regards to food waste, I apply CMA to connect connecting diet-related health problems stemming from inadequate calories and micronutrients to food that has been wasted due to maintaining certain standards as well business protocol (Buzby et al. 2011; Coleman-Jensen and Nord 2010; Parfitt et al. 2010; Pinstrip-Anderson and Herforth 2008; Eikenberry and Smith 2005; Farmer 2004; Kantor et al. 1997).

The theoretical application of SV and CMA offers a holistic view of food waste as a necessary resource in alleviating food-related health problems associated with caloric deficiencies, rather than a mere by-product of production and consumerism. Due to historical background from the preceding chapter, food waste reuse is a part of America's past, and providing numeric data on caloric consumption perhaps a radical change could be made in how America currently views and treats food waste. By employing the theories of SV and CMA, I will identify (1) the social structures inhibiting individuals from reaching their fullest potential, and (2) examples of food-related health problems that illustrate the definition of reaching one's fullest potential. This chapter focuses on the above mentioned social structures: political economy, namely government-funded investment in agriculture as well as hygiene and food safety regulations; socioeconomic status in relation to food access; and the stigma of trash, chiefly the norms and behaviors that stem from how Americans trash.

The FDA (Sec. 201 [321]) defines the term "food" as (1) articles used for food or drink for man or other animals, (2) chewing gum, (3) articles used for any such components. According to Fortin (2009), this term provides a broad scope of authority for the FDA, which may conflict with the regulating power of FSIS. Food safety, as noted in history chapter, was necessary for the evolution of agriculture and food processing in America. The government regulatory bodies, please see table, are key in keeping food-borne disease to a minimum. For example, recent 2014 recalls: On February 10, 2014 the FDA recalled Uncle Ben's Rice due to school lunch illness in Texas, and on the same day the USDA/FSIS recalled 8.7 million pounds of diseased meat. It is obvious how necessary governing bodies are when it comes to consumer safety in terms of food. Quality standards have contributed to food safety (Escriche et al. 2006). For example, the levels of food-borne pathogens in food production have been reduced and there are other benefits related to general human and animal health; in turn, consumers' confidence increased (Trienekens and Zuurbier 2008). Definitions of different types of waste exist according to the FDA and USDA (yard waste, compostable waste, hazardous waste, etc.), but there is a large grey area concerning at which point food is no longer part of the edible, sellable food stream and is designated trash or waste.

However, when do food safety laws and regulations become disadvantageous? When do these regulatory agencies deny access to food to specific demographics as well as perpetuate the cultural behavior of wasting edible food? In a report funded by and carried out by the USDA, Kantor et al. (1997) address America's food losses and what we can do to alleviate some of the excess, edible food waste; curiously, this report does not include a single rule or regulations set forth by the governing food safety regulating bodies that be amended to lessen food waste.

Safety regulations combined with consumer standards raise food prices, as well as raise the threshold for aesthetically appealing foods; for a complete and comprehensive outline of food laws and regulations, please see Fortin (2009). Bloom (2011): buyers (grocery stores, etc) do not buy blemished/unshaped/ugly produce due to high demands from consumers; this creates waste on the level of farming/production because farmers would rather plow under aesthetically displeasing crop, as well as waste on level of distribution since these items will not stay on shelves and are first to be tossed. Table 4, adapted from Fortin (2009), exemplifies how consumers and distributors alike can be easily confused on whether or not a product is safe for consumption:

<i>Table 4: Food Safety Product Dates</i>	
Pull Dates	This is the last day that the manufacturer recommends the product remain for sale. This date takes into consideration additional time for storage and use at home, so if the food is bought in the pull date, it can be eaten as a later date. How long the product should be offered for sale, the manufacturer, based on knowledge of product and product's shelf life, determines how much storage is allowed.
Quality Assurance or Freshness Date	This date shows how long the manufacturer thinks a food will be of optimal quality. On the label, it may appear as "Best if used by..." This doesn't mean, however, that the product shouldn't be used after the suggested date.

Pack date	Date the food was packaged or processed enables consumers to determine how old a product is.
Expiration Date	Last day on which a product should be eaten. State governments regulate these dates for perishable items, such as milk and eggs. FDA regulates only the expiration of infant formula.

Adapted from: Fortin, N. D. (2011). Food regulation: law, science, policy, and practice. Wiley.com.

Although the original intention of food date labels was honest enough, responding to consumer concerns and honoring food safety precautions, the governing bodies may have created more confusion than clarity. The FDA, the federal agency responsible for food safety, does not oversee food expiration dates.

“With the exception of infant formula, the laws that the Food and Drug Administration (FDA) administers do not preclude the sale of food that is past the expiration date indicated on the label. FDA does not require food firms to place “expired by”, “use by” or “best before” dates on food products.”¹⁵

The fact that there is no regulation of expiration dates, one can assume that this is a mere marketing strategy.

The USDA, which oversees meat, poultry, and some egg products, also says date labels are voluntary. The manufacturer, if they choose to use a date, must adhere to specific wording, such as “packing” date, “sell by” date, or “use before” date. But the USDA never defines what those terms mean or how they should be determined. So according to the federal government, a date can be there, or not be there; and if it is there, the manufacturer can decide what it means without any further explanation for consumers (Gunders et al. 2013). To complicate matters further, labeling requirements differ from state to state: some state agencies do require date labels for certain products, like dairy items; others, like New York, have no requirements for food dates at all.

¹⁵ <http://www.fda.gov/aboutfda/transparency/basics/ucm210073.htm>, Accessed 7/19/2014

Table 5, adapted from the EPA’s “Waste Not Want Not,” is a guide to understanding food recovery and donation organizations nationwide. Similar to Kantor et al. (1997), this report does not touch on hyper vigilance of food safety regulation that creates the waste, but rather what can we (as citizens) do to help redistribute this food through volunteer programs. It also emphasizes the breadth of redistribution organizations and efforts available nationwide, but hides the fact that food waste and food insecurity are both on the rise.

Table 5: Redistribution Organizations	
ORGANIZATION	WHAT THEY DO
Cooperative Extension Service (CES)	Establishes local hunger programs through diverse agencies and community-based groups; promote food safety, proper nutrition and food recovery programs
Foodchain (FC)	Founded 1992. Found in 40 states, complies with food safety and donation guidelines. In 1997, distributed 150 million lbs of food to 12,000 agencies.
Farm Service Agency (FSA)	Each state has one designated staff member to coordinate field gleaning activities
Second Harvest (SH)	Nationwide network of food banks; largest charitable hunger relief organization in the country.
Society of St. Andrew (SOSA)	Leads field gleaning organization, rescues over 20 million pounds of fruits and vegetables per year that would otherwise be discarded.
From the Wholesaler to the Hungry (WH)	Large-scale, systematic distribution of fresh fruits and vegetables to low-income people.

Food waste in America demonstrates wasted nutrients in light of individuals and families facing food insecurity and the growing number of food deserts across the nation (Cassady and Culp 2007). A food desert is defined as a community with insufficient grocery stores (McMillan 2012; Smith and Richards 2010). Whole foods and nutrient-dense foods are wasted in areas where access to food is abundant; in contrast, food deserts mark areas that

lack nutritionally viable food (Jiao et al. 2012). Therefore, the most obvious place to dumpster dive is in affluent areas laden with big business agriculture and grocery stores as opposed to food deserts, no food in the first place. Who is exposing these resources, and moreover, who has routine access to this resource? It is usually the individuals who live in affluent areas. By employing SV, I argue that socioeconomic status is a social structure that can limit an individual's access to nutrition resulting in health problems, and the application of CMA can address how to empower individuals by generating more access to nutrition in light of excess food waste in America (Pinstrup-Anderson and Sandøe 2007; Pinstrup-Anderson and Herforth 2008).

According to Pool (2012), the amount of food currently harvested yields 4,600 kilocalories daily for every person on the planet; surprisingly less than half, only around 2,000, of those calories are actually eaten (Global Food and Farming Futures 2011; Stuart 2009). The interwoven thread of market-driven capitalism and the associated systemic problems of consumerism inhibit food waste redistribution and infrastructure, therefore simultaneously reinforcing and perpetuating inherent power structures that those with higher incomes to set food standards and access while creating less access to healthy food for marginalized populations (Nestle 2013; Donovan 2012). For example, a nutritious, organic apple will be tossed due to an aesthetically displeasing blemish in urban areas that strive to comply with supply and demand; but in food deserts sprawling with convenience stores, you can purchase empty-calorie snacks that lead to counteractive health effects after continuous exposure (Pollan 2008). Food available for purchase in food deserts can oftentimes be lower in nutrient density than food waste found thrown in urban dumpsters (fresh fruits, vegetables and organic meats) (Nestle 2013; Seifert 2010). These are points are key in the argument of how food is linked into social justice and social capital, institutionalized racism and how access to healthy food promotes inaccessibility to healthy food; the common thread being political economy (Pottier 1999).

Although the fact remains that 1 in every 6 Americans face food insecurity, political, economic and cultural power structures create drive competitive consumer markets; this results in lower socioeconomic incomes having less access to highly priced nutritious food

(Eikenberry and Smith 2005). Coincidentally, stringent hygiene standards, stated above, overlook hunger in America and see wasting edible foods as an acceptable behavior. Dumpster diving, eating others' trash, remains a highly marginalized activity, as it is associated with dirt, germs, and rotten, spoiled food (Clark 2004; Strasser 1999; Douglas 1966). Dumpster divers engage in a hidden economy, blurring the lines between personal property, trash, and access to resources by using excess waste of retail grocery stores to find a viable food pathway without any economic exchange (Black 2007; Ferrell 2006). The practice of dumpster diving reveals a subculture that engages in petty criminality as a means of overcoming the economic boundary of necessity as well as creating an avenue of defiance against conventional consumer culture (Black 2007; Ferrell 2006). Although dumpster diving may be viewed by the mainstream or conventional American consumer as a socially unacceptable means food pathway, the typical middle class freegans who participate in dumpster diving create a niche that allows for a less stigmatized view of this activity and a greater understanding of the realm of edible, salvageable food waste (Nguyen et al. 2014).

In terms of the broad-spectrum access to food, socioeconomic inequality has a direct impact on the existence of malnutrition and hunger due to the fact that income is one of the most powerful predictors of health status (Woolf 2007; Latham and Moffat 2007). Some argue that social and economic struggles result from a competition-driven market economy (Farmer 2004; Mintz 1977; Roseberry 1988). These cultural practices remain a part of American's economic values as well as being culturally engrained in a nation that experienced high levels of poverty after WWII (Counihan 2013).

I employ the theory of structural violence to explore access to food, specifically adequate nutrition, as constituting a basic human right. Structural violence serves as a vehicle for demonstrating the injustice of the continuing existence of hunger and malnutrition in America, a country where 96 billion pounds of edible food is thrown out annually (Seifert 2010; Parfitt et al. 2010; Kantor et al. 1997). Food waste exemplifies overproduction, creates environmental degradation, represents our values of food production, and also raises the issue of social injustice in terms of adequate nutrient access (Edwards and Mercer 2007; Scanlan 2005; Drenowski and Spector 2004). Eikenberry and Smith (2005) concluded that there is a

great deal of literature available on food security, but what is lacking is data concerning the use of dumpsters as a viable source of edible and nutritious food.

Given the statistics on food waste in the introduction, it is curious that pockets of hunger and malnutrition occur in America. Food deserts have also been described as areas that lack available healthy, nutritious food options (Gustavsson et al. 2011; Russell et al. 2011; Lane et al. 2008; Wrigley et al. 2003). Therefore, low-income populations suffer from lack of adequate nutrition in food deserts. Two main issues are addressed with the topic of food deserts: (1) actual distance and access to healthy foods via grocery stores and markets; (2) price and affordability of healthy foods if populations of food deserts were given access to nutrient dense foods (Weatherspoon et al. 2013; Appelhans et al. 2012; Schuetz et al. 2012; Wideneer et al. 2011; Michimi and Wimberly 2010). For example, Alkon and Norgaard's (2009) research demonstrated that the Karuk tribal population living in low-access food deserts not even able to purchase food commodities that they once produced on their land. The lack of nutritious food attributes to the Karuk's elevated rates of Western civilization diseases (such as diabetes type II) and also demonstrates the importance of food justice (Alkon and Norgaard 2009). Access to grocery stores is a major component missing in food deserts, but given the research on the food waste stream it is curious that more food is not redistributed to low-cost grocery stores in low-income areas. Wideneer et al. (2012) conducted research on a mobile market system model that would bring nutritious foods into urban food deserts to address the problem of spatial and geographic constraints. The research site of Bellingham is not a food desert, but as mentioned in the introduction, hunger is still experienced by at least 10% of our population. Therefore, this research will focus on the aspect of utilizing food waste via the avenue of dumpster diving, as low-cost grocery stores already exist in the area.

More research is needed on the ability to utilize our food waste stream in order to supplement the diets of those populations lacking access to nutritional options (Pool 2012; Hall et al. 2009; Stuart 2009). Caspi et al. (2012) demonstrate that many low-income populations do actually live within a mile's walking distance to grocery stores. This research exemplifies the fact that dietary behaviors may be more aligned with the lack of education of

the actual proximity of grocery stores, that is to say that people are unaware of where grocery stores are located (Caspi et al. 2012; Apparicio et al. 2007). On the contrary, research has found low-income populations living in urban food deserts will opt to buy healthier choices if they have access to affordable, nutritional foods such as fruits and vegetables (Weatherspoon et al. 2013; Drenowski and Darmon 2005b).

The author's main objective in applying structural violence to food waste is to argue that wasted, nutritious and still edible foods are eaten by dumpster divers to supplement their diet; but dumpster diving is not accessible to everyone, therefore redistribution of wasted foods could benefit more diverse populations. Nutrition plays a major role in the health of an individual (Carrero-Bastos et al. 2011; Michimi et al. 2010). In regards to access to access to nutritional foods, both spatially and economically, Michimi and Wimberly (2010) found an increase in obesity and decrease in fruit and vegetable consumption as distance to supermarkets increased in urban areas. Obesity is one of the major health concerns of America presently, and has been deemed an epidemic (Popkin et al. 2011; Drenowski and Darmon 2005a). Lane et al. (2008) found that low birth weights had an indirect correlation to supermarket proximity, demonstrating that women who had access to fresh produce and nutrition foods experienced fewer low birth weight births than women living in urban food deserts (where convenience stores sold mostly lottery tickets, liquor and cigarettes). According to the thrifty genotype theory, research has shown that there is a direct link between low birth weight and adult obesity, cardiovascular disease, as well as diabetes mellitus and insulin resistance syndrome (Sovio et al. 2013; Virkus et al. 2013; Tijskens et al. 2010; Wells 2009; Boney et al. 2005; Singhal et al. 2003).

Food justice connects sustainable agriculture and environmental justice movement by highlighting both the institutional racism and racialized geography that results in and perpetuates food insecurity (Hutchinson 2011; Alkon and Norgaard 2009). By food justice within the framework of power and political efficacy, research on food security emphasizes the "institutionalized nature of denied access to healthy food," (Alkon and Norgaard 2009:300). Alkon and Norgaard (2009) demonstrate how food justice can highlight race and class privilege when low-access populations are confined to food deserts full of processed,

fast, and commodity foods, devoid of nutritional value (290, 300). Nutrition, dietary restrictions, allergies and intolerances are certainly not reserved for the rich. Low-income consumers and unemployed individuals are limited in the foods that can be purchased and many are not eligible for food stamps or government support (Kaufman et al. 1997). This restricted access to a healthy diet is characterized as structural violence because it is difficult for this population to earn enough to feed themselves or their families. The long-term effects of inadequate nutrition can greatly affect an individual by manifesting in a range of physical ailments and conditions (Dodd 2011). Approximately 21 million Americans need food donations as means of survival to prevent their families from going hungry, yet food banks' emergency feeding programs frequently run out of food before they can serve all the families in need of assistance (Hunger 1997).

One symptom associated with hidden hunger is obesity, as consuming over-processed foods can result in a lack in micronutrients, which then leads to a false hunger triggering in overconsumption of calorically dense foods (Burchi et al. 2011). Western civilization diseases, such as obesity, heart disease, and Type II diabetes, continue to rise (Carrero-Bastos et al. 2011) while America's landfills have an abundance of edible, nutritious foods tossed to them daily (Donovan 2012; Vaughn 2012). Humans have evolved by eating fresh, whole foods and although these foods are still the most nutritious (Boyd Eaton et al. 2010; Armelagos 2010; Cordain et al. 2010), they have typically become the most expensive products at grocery stores (Weatherspoon et al. 2013; Appelhans 2012 et al.; Armelagos 2010). According to the literature, both nutrient dense and nutrient poor foods are found in our landfills and dumpsters, but for different reasons. Nutrient-poor foods are over-produced to the point that they cannot even be given away at second hand grocery stores; while nutrient-dense foods are wasted because of their short shelf lives due to strict health standards and rising prices (Pool 2012). For that reason, not only is nutrient-dense food (fruits and vegetables) wasted due to its brief shelf life but also lack of interest from the general public may be a rising factor of why fresh produce continues to be grossly wasted on the retail level (Kantor 1997).

Salvaging wasted food already placed in the dumpster is not be accepted by the majority of Americans, therefore the following theoretical applications allow us to deconstruct cultural stigmas inherent in the words trash and waste, as well as offering insight into why we find it more convenient to perpetuate these stigmas and the amount we waste rather than lower our standards of aesthetics and lessen our consumerism (Nguyen et al. 2014). Specifically, in terms of commercial food markets, the stigma of not having enough or selling out-of-date foods lowers the standard of the store; mainstream American consumers demand, via buying power, the freshest products and an abundance of them. The physical boundary of a dumpster combined with the abstract boundary of social stigmas inhibits current cultural norms from accepting or knowing that much of what we throw away is not only still edible, but usually encased in packaging with a few days remaining until expiry (Vaughn 2012; Stuart 2009; Royte 2007; Strasser 1999). When discarded food finds its way into a trash can or dumpster, a place designated for garbage, it is generally associated with inedibility and contamination. Certain cultural contexts consider dumpsters to be too hazardous in which to find edible, nutritious food (Coyne 2008; Black 2007; Eighner 1991). Therefore, individuals who exploit these resources are associated with the stigma of dirt and uncleanness, the marginal, cast out as deviants even though they may be recovering nutritious and disease-free foods and reducing the amount of food that goes to waste (Nguyen et al. 2014).

Literature regarding food redistribution programs differentiate between calories acquired from socially acceptable versus socially unacceptable means, and therein reject edible calories obtained through means outside of mainstream producer-consumer food networks (Gross 2009; Holloway et al. 2007). The USDA defines food insecurity as a person with “limited or uncertain availability to acquire acceptable foods in socially acceptable ways,” which only further marginalizes those populations forced to salvage food from dumpsters (Kantor et al. 1997:3). In a study involving access to food, Eikenberry & Smith (2005) concluded that creating food recovery and redistribution programs would provide a “socially acceptable means” of accessing foods for marginalized and low-income populations facing nutrient-deficient diets (187). It is surprising that although edible food continues to end up in the dumpster, social acceptability remains a key component of how Americans

view food and the social structure of cultural norms largely dictate the parameters of food waste salvage and redistribution.

The literature also emphasizes that more mainstream (or conventional) food networks uphold stringent aesthetic standards (Holloway et al. 2007; Morgan et al. 2006). For example, Black (2007) investigated the marginalized populations and their avenues of accessing food via urban foraging, which she defines as the gathering of food from urban refuse without any economic exchange. By focusing on the resourcefulness of urban foraging in regards to marginalized populations of Paris and Milan instead of the social stigma, Black (2007) argues that when hunger is the main motivation for food, one's perspective changes from the prevailing norms of where one should find edible food. However, the literature regarding alternative food networks leaves a large gray area regarding post-retail networks and other food pathways that connect producer to consumer (Holloway et al. 2007; Sonnino and Marsden 2006; Morgan et al. 2006; Ilbery and Maye 2005; Watts et al. 2005; Miele and Murdoch 2002). Alternative avenues such as the following: Food Not Bombs, Food Banks, dumpster diving, and post-harvest farm donations.

I am not arguing that because someone could dumpster dive, that they should; nor am I advocating that if food insecure populations can access edible food waste, then they must eat from dumpster. First, the very fact that socioeconomic status and race factor into how we are treated differently and affected differently by the law (Epp and Maynard-Mooney 2014; Curtis and McClellan 1995) is enough to argue against everyone and anyone dumpster diving. Second, Fothergill (2003) outlines the stigma of charity, explaining that donated food (even in the case of a natural disaster) may not always be well received. Third, the general demographic of people facing food insecurity do not have the time, storage space, or status security to risk their reputation by challenging cultural norms.

If nutrition supplementation from salvaged food were made accessible to low-income consumers and all ranks of socioeconomic statuses, it could move Americans away from food insecurity and hidden hunger and towards better nutrition. However, in order for this to occur, a huge cultural (and political) shift in perspective and infrastructure is required. If food

waste could be reduced via salvaging and redistribution, the pollution caused by methane gas stemming from food rotting in landfills could also be reduced. The shift of the cultural perception of trash would need to shift so that dumpsters and trash were no longer stigmatized and kept in the background. But that would be is treating the symptom of wasted food rather than addressing why edible food enters the landfill in the first place.

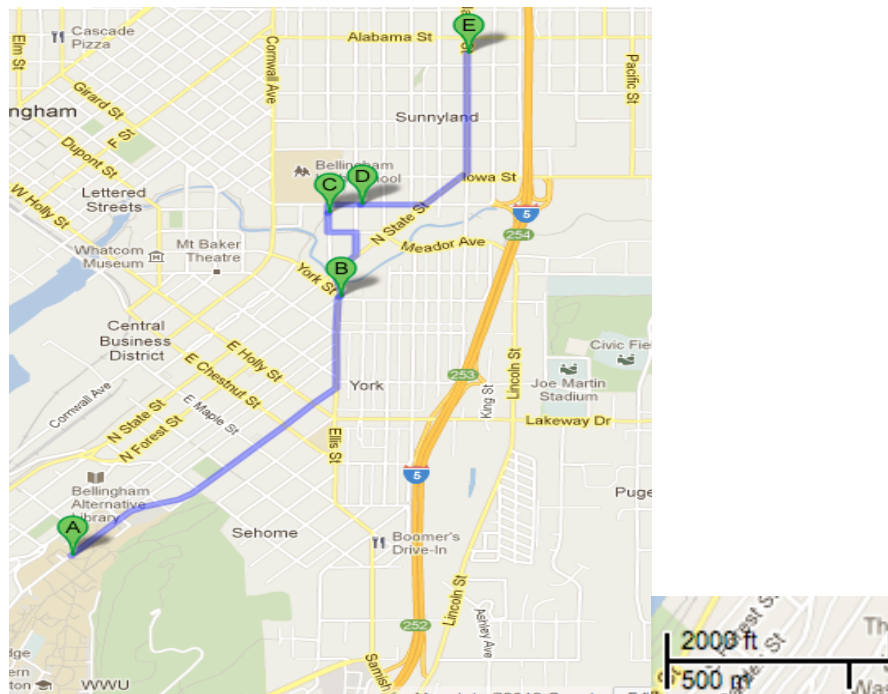
Chapter Four: Methodology and Findings

The literature regarding dumpster diving is based in narrative data, expounding on the motives that prompt individuals and/or subcultures to engage in dumpster diving, whether or not it is a choice. Eating food found in the dumpster is inherently difficult for mainstream culture to understand, and is thus culturally stigmatized. The literature lacks nutrient breakdown of foods salvaged, information that could help alleviate malnutrition and food deserts in America. The research for this thesis aims to offer a research design on accessing this information. Accordingly, there is extensive literature regarding the food waste in America, but research on what stages of the food waste stream are the most substantial in means of salvaging edible food for redistribution is lacking. This research aims to focus on nutritionally viable options that can be salvaged from the retail level of food waste stream by documenting dumpster diving that occurs at the retail level, both in local supermarkets and take-away restaurants in Bellingham, WA (See Appendix I for the list of stores featured on the Figure 3, page 44).

Research Method

I hypothesize, via a 3-prong research methodology that participants in this study will be similar to the freegan populations described in the literature (Donovan 2012; More 2011; Barnard 2010; Edwards and Mercer 2007). Demographic descriptive qualities for freegans, according to other findings conducted on dumpster diving, include middle-class background, educated and/or college-enrolled, mostly male, between the ages of 18-25 (Edwards and Mercer 2007). I hypothesize that even with the existing donation-based redistribution programs prevalent in Bellingham, food waste at the retail level continues due to stringent cultural norms of hygiene and therefore local dumpster divers access and expose this wasted resource.

Figure 5



Research Setting

The research for this project was set within the city limits of Bellingham, Washington; a small town within Whatcom County limits with a population of 76,130¹⁶. The overall food insecurity rate in the state of Washington is 15.9%, and the child food insecurity rate is 24.2%¹⁷. Although a significant portion of Eastern Whatcom County is devoted to farmland and agriculture is one of the main resources in the area and is listed as a food desert according to the USDA, it is listed as a food desert. In Whatcom County alone, 781 out of 6410 people are identified as low access; 125 low-income people with low access; 204 children age 0-17 with low-access. The USDA defines a low-access community as one with “at least 500 people and/or at least 33 percent of the census tract's population must reside more than one mile from a supermarket or large grocery store,” (USDA 2010). Appendix XI shows current demographics regarding ethnicity and poverty levels in Whatcom County.

¹⁶ Whatcom Council of Governments. (2009). Current Population Data. Retrieved on April 4, 2010 from: <http://www.wcog.org/Data/Demographic-Data/Data/Demographic-Data/Present/298.aspx>

¹⁷ <http://feedingamerica.org/>

Appendix IV lists the organizations in Bellingham that are “finding more opportunity to work with grocery stores, farms and farmers markets in order to save this nutritious and healthy food to meet growing hunger needs in Whatcom County” (Ch. 3 CFA Pdf).

Research Design

The following ethnographic fieldwork models applied are the following: participant observation, opportunistic snowball sample, dumpster dive journals, and food diet journal recalls. Using this combination of qualitative and quantitative methods has proven more effective and holistic results (Bernard 2006). Participant observation is an anthropological research method that immerses the researcher when entering an alternative reality, allowing the researcher to partake in an alternate reality while emphasizing the reflexive nature of observation in regards to the researcher without limitations on data collection methodology (Dewalt & Dewalt 2002; Tonkin 1984; Spradley 1970; Adler & Adler 1987). A post-modern critique of participant observation is also embedded in the methodology of this research by utilizing informants’ voices via informal interviews and personal communication in order to collaborate on discourse rather than imposing biases (Dewalt and Dewalt 2010; Tellis 1997; Strauss and Corbin 1998). A multidisciplinary approach to the topic of food, the categorization into nutritional value and edibility, has created a long-standing collaboration in order to cover the depth of a topic that plays such a major role in human lives (MacClancy et al. 2007). Additionally, the necessity of a stringent interdisciplinary study of food has been called for, since we, as humans, rely on food and rules of food consumption to help shape our reality (MacClancy et al. 2007; Sutton 2001). For this reason, I chose to incorporate both quantitative and qualitative research methods for data collection discussed in this chapter, allowing the data to demonstrate that food and its consumption resides in grey areas of the nature versus nurture debate.

Before any data could be collected I was approved by the Human Subjects Review Board of Western Washington University to conduct my research. Participants were recruited either from responding to a poster or by word of mouth, and agreed to complete and sign a consent form approved by WWU Human Subjects Review Board. They then had the choice of extending their participation in the research, by sending the researcher detailed dumpster

dive list compilations and/or completing a 10-day diet journal recall. Participant observation and food journal documentation occurred from November 2011- March 2012. This documentation occurred at participants' greatest convenience, either at the dumpster site itself or after food was taken to living quarters to be organized. Analyses of written participant observation field notes, data documentation and food diet journal took place at Western Washington University.

The participant observation portion of this study focuses on the compilation of dive lists provided by the participants, as well as anonymous quotes from informal interviews. To document my own personal dives, I took videos and used voice memos. The informed consent form covered this area of research as it tells participants that recovered food was to be recorded over a two-month period.

A questionnaire was used to identify background and demographic information from willing participants. The short questionnaire (see Appendix II) was created specifically for this study in collaboration with members of my committee, and was inspired by research conducted by Moré (2011) and Edwards & Mercer (2007). The anonymous survey did not follow any questionnaire model, and was kept to a minimum so that participants would not feel overwhelmed if they were filling it out while in the field. A sample of the questionnaire can be found in the appendix. Demographic information will serve as the independent variable of this study.

The third segment of the research design was a food diet journal, which I employed to assess how much and which kinds of the recovered foods were actually consumed and what well portion of the diver's diet came from the store versus the dumpster. The journals provided information to evaluate the nutrient density of foods recovered by means of dumpster diving, in order to see if the nutrient-dense foods could be accessed without an increase in income (Metzgar et al. 2011; Frassetto et al. 2009). The optional 10-day diet journal recall covered ten consecutive days, and occurred whenever the informants had the most time available during the months the study took place. Food diet journals generate data for the dependent variable of this survey.

This three-prong approach of research designs will be useful for examining the nutritional value and breadth of what is being recovered through the food waste stream, while supplemental materials will be used to understand cultural aspects of dumpster diving that were foreign to the researcher at the start of the project. These supplemental materials will draw from recent dumpster diving blogs, freegan websites, published accounts of dumpster diving in the literature, recent food reclaiming documentaries, as well as governmental material for wasted food statistics, recent TV episodes documenting dumpster diving, and legal reclaiming procedures/protocol published by the government.

Analysis of Results

Due to the use of the snowball method for finding participants, the desired sample size of approximately 10-15 individuals for the survey portion actually ended up being five participants. Of those five, three participants chose to give me dumpster dive list compilations, and two participants willingly participated in the detailed dietary analysis (food diet journal). The results of the study were statistically insignificant, and ultimately inconclusive in answering the questions of why people choose to waste food. On the contrary, the small-scale research of this study allowed for an in-depth compilation of foods that people can retrieve from the dumpster, how much and what kinds are eaten, as well as adding more information to existing literature on who eats from dumpsters and why they do so.

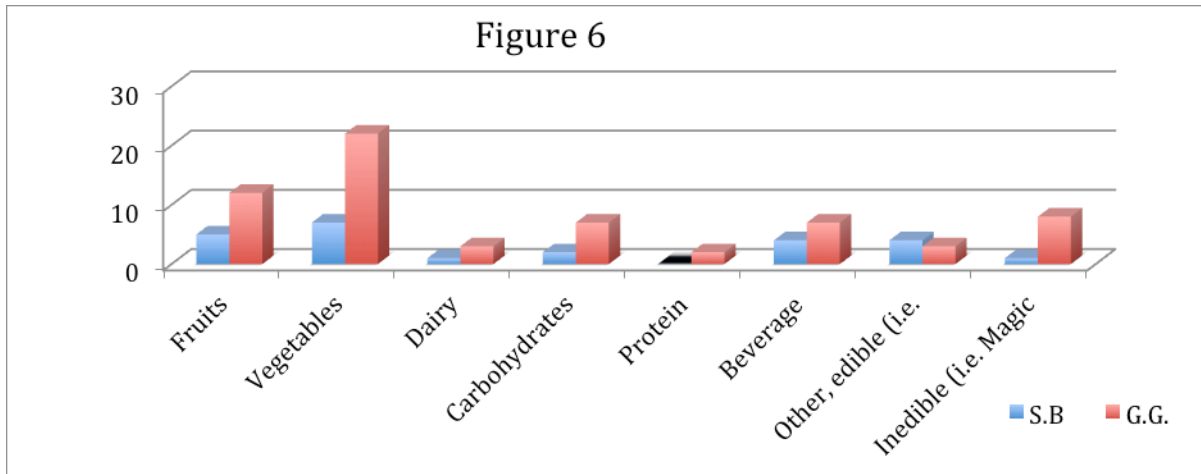
Identification of dumpster divers via survey results

According to survey results, the demographic information is as follows: ages 18-25, male, unemployed, of middle-class origin, and students; one female participant filled out a survey, but she lives in Seattle, WA. Motives for dumpster diving: fun, free, social, and salvaging waste. In response to the survey question “Why do you dive?” one participant wrote “For fun!” Another participant added in the comment section that he “can afford groceries. I have my favorites, but I like all food, especially when it’s free.” He also listed that he dumpster dives to “Learn to cook something that I may not have bought.”

By comparing food list compilations with actual diet journals one notes that a lot of what is taken is stored for future use (which may not always be intended for consumption). This is exemplified in the following quote from the questionnaire:

“I don’t think the 24-hr diet recall really makes sense. Diving can be hit and miss and cannot necessarily feed you every day. It also isn’t something done every day... You should just have a by-date-list of what was recovered to learn the frequency and bounty of their dives. For instance, last night I dumpstered about 20-30 lbs of bananas. I didn’t eat a single one. But I am making banana wine out of them (approx. 5 gal). So where does this fall in your diet recall? The bananas were too bruised for good use other than this. But the diet recall doesn’t account for this. Get why it might be a little off? 24 hours is not a good measure of time. I would say extend it or scrap it and stick to tabulating by date mass information of quantity resources. But then this is your study haha. Sorry to rant...I think you’re doing a great thing. Good luck.”

Accordingly, if a massive amount of food is found that requires refrigeration and/or freezing, and the diver does not have adequate space to store it, there is no reason to take it for the food will just rot at their home; unless, as demonstrated in the quote above, it is a fruit that can be made into alcohol. But what this participant did not realize was that this study was not measuring the caliber of food accessed, but rather creating a model of studying amount (calories) and kinds of foods (nutrients) accessed from the dumpster.



The Dive list compilations component of the research created categorization of all items salvaged, to gain insight on breadth of excess. See Appendix VI lists for a coded version of complete list of the dumpster dives. Figure 6 is a broad representation of categories of items salvaged from the dumpster for the reader to gage approximate percentages, which demonstrates that fruits and vegetables are the most frequent items found in the dumpsters and are generally still retrievable and edible.

Results of Diet Journal Recall

Table 7 shows the percentages of to the diet journal recalls completed by two of the five total participants:

<i>Table 6: Diet Journal Recall Frequency Analysis</i>				
	DD	STORE	FOOD BANK	OTHER
Participant A	25%	45%	11%	17%
Participant B	29%	70%	0	.7%
Overall	28%	59%	3%	10%

The frequency analysis of items was calculated by adding up the separate categories of food, as participants were asked in advance to identify the source of food while completing their journals. According to the analysis of the 10-day diet journals, using ESHA Food Processor, both participants had a wide range of nutrients from eating salvaged food and supplementing with store bough items (see Appendix VII for complete nutrient and caloric breakdown of diet journal recalls).

Beneficial outcomes of the study include some nutritional profiling which may be the first of its kind in this context as it is largely ignored in the available literature, extensive dive lists, and more knowledge about the urban forager sub-culture. Additionally, the diet journal recalls provided information about the fact that urban foragers are also accessing other gleaning sources in town: FNB and FB, something that is true for at least two participants in the study. Due to the sample size of both surveys and diet journals, hopefully information gained was more in-depth. Minimally I was able to quickly process surveys and data, even though some participants wrote lengthy suggestions on the survey and it took a long time to create an accurate spreadsheet based on the diet journal recalls (ESHA Food Processor nutrition and fitness software).

Limitations

The data collection for this research, although sample size was exceedingly small, offers a collaboration of methodology to the food waste literature of alternative food salvaging pathway, which tends to emphasize a more qualitative methods approach. To summarize, participants of this study were given the choice of level of involvement in the research: (1) background/demographic questionnaire, (2) lists recording dumpster dives, (3) 10 day diet journal recall. This study was conducted in a small city situated in the very liberal west coast of Washington, but interestingly the amount of interest in the research shown by many was not reflected in participation numbers. First, there was no monetary compensation for participation; perhaps if there were, this would have generated more participation. Second, the method of snowball sampling was more successful via word of mouth in the alternative

community (people that met me at the Alternative Library) rather than through the posters that had been placed all over town. I was able to give the people I met firsthand a briefing on the research were those who ended up participating, which differed from those who responded to the recruitment posters by email and did follow through with participating. Additionally, I have friends that would tell me they know many dumpster divers, and would then carbon copy me on a group email informing everyone of my research and to please reach out to me; sometimes those emails would lead to one-on-one inquiries, but once again, that form of recruitment did not yield participants.

Limited participation could also be attributed to the lengthy process required to participate. The background survey was relatively short and was usually completed within a few minutes. However, the dive list compilations lasted a few months, and the 10-day diet journal recall also required a lot of work with no compensation. Many people involved in the Food Not Bombs Bellingham chapter or freegan lifestyle in Bellingham were excited to hear about my research (approximately 30 people over the course of research), but only 4 people from Bellingham completed a survey (and 1 from Seattle who was not included because of location), 3 people sent me dumpster dive list compilations, and 2 were willing to complete a food diet journal.

Two prominent themes are exhibited here. First, regardless of how “fun” or rewarding dumpster diving can feel, the cultural stigma of marginalization still permeates America’s psyche so strongly that avid dumpster divers prefer not to publicly admit to their actions (Vaughn 2012). As one dumpster diver from Phoenix told reporters that even though she could see herself dumpster diving regularly in order to save money while paying her way through school, she “could never tell anyone;” this also seemed to be a trend in recruiting participants for my study (D’Andrea 2009)¹⁸. This is not always the case, as the Alternative Library coordinator Henry was quoted in a short YouTube stating that his parents were proud of their son’s resourceful efforts. A second theme would be that of fear of the researcher and academia, as quite a few folks voiced that they did not want research to be done on this topic

¹⁸ <http://www.phoenixnewtimes.com/2009-08-20/news/dumpster-dining-for-freegans-eating-garbage-is-getting-downright-trendy/full/>

due to further lock down and surveillance of dumpsters. Accordingly, a few of the professors in the department were wary of conducting research on illegal activity, as well as the fact that the researcher could potentially have been injured or harmed during ethnographic field work and observation.

If this study were ever to be recreated, I think the best place to start would be to host a focus group so that participants could fully understand the purpose of the research, the length of time participation would necessitate, as well as more information from the community that was not accessible to the researcher due to the “at-home” or “on your own” element of the research. Also, I initially planned on collecting the journals after day one to see if journals were detailed enough and filled out correctly. In the case of my research, due to the busy lifestyles of participants as well as time of year that the study was conducted (late fall, through winter quarter), I allowed participants to record their diet journals without interruption. But I think it would be more beneficial to have diet journals collected each day. The complexity and variability was a major limitation in terms of tracing themes or appropriately graphing data. Since participants completed the dive list compilation at random, there were no set numbers of dives required; therefore, the data in Fig. 4 may be misleading since Individual 1 had fewer dives than Individual 2. Accordingly, the simply tally method from the tables listed in Appendix V do not account for weight of items nor for how many of one item was found (i.e. 3 pounds of potatoes counts for one tally of vegetables, 18 avocados counts for one tally of fruit). Another limitation is categorization of foods. I separated the foods according to the FDA guidelines listed in Appendix III. For a more complete analysis of the foods, please see Appendix VII for a nutritional breakdown from the diet journal recall.

Lastly, if this study were to be repeated, one would need to account for biases. Due to snowball survey technique used to connect with the local dumpster diving population of Bellingham, the dependent variable is biased because I found participants via the Alternative Library. That skews the data as the majority of individuals who associate with the AL participate in alternative lifestyles, the AL is located within walking distance of the university, and many of the individuals are associated with the university. Accordingly, the dependent variable of foods accessed and collected has a heavy bias due to the independent

variable, the demographic of participants (see Appendix IX for Whatcom County ethnicity demographics). For example one participant noted in the demographic survey: "...most finds consist of sugar, carbs, highly processed goods, and meat (usually not taken). We try to find a balance between healthy and freegan," (Nov. 2011). Therefore, given a wider breadth of participants, or an unbiased sample, distinct themes or different data may have arisen if the participants had different backgrounds or belief systems, specifically regarding health, nutrition, and politics.

Chapter Five Ethnography of Dumpster Diving Research

Pete: neighbor and college student; living in a household dedicated to diving, recycling, up-cycling, and no waste. Pete's roommate left for Europe soon after I began this study to work on a documentary on dumpster diving.*

**Grant and *Craig: College students who dumpster dive for household. These two took me on my first dive.*

**Henry: Member of the Alternative Library; in charge of Food Not Bombs; feeding the homeless and less fortunate as well as those at the Alternative Library with food from DD. Redistribution of waste stream foods--presentation and preparation of foods makes one forget that these foods came from the trash.*

**Baxter: Dumpster diver who feeds entire household with finds. Sometimes makes trips to the grocery store to supplement. (Vegetarian)*

**Simon: New to diving. After going out first time with Jeremy and I, Simon continues to dumpster dive on his own. Was very impressed by amount/variety of foods found.*

Access is a common denominator of structural violence as income and socioeconomic status prevent certain populations from healthy, nutritious foods. In the context of this research, this ethnography demonstrates how the privileged continue to reap benefits of America's excess, while the marginalized still face inadequate nutrition due to low-access neighborhoods and lower economic statuses (Woolf 2007). Although dumpster diving can be viewed as fun and a way to help lower the amount of food in our landfills, the veil of privilege allows certain demographics to access the food in our dumpsters without reprimand; while lower socio-economic statuses cannot afford the social consequences associated with dumpster diving or even the acceptance of donations.

A few years ago, while living in Tucson, Arizona, I noticed a grocery store employee taking perfectly edible fruits and vegetables and throwing them into a big box for trash. When I asked him if I could have them, he told me they were only allowed to give the produce away if I intended on composting it. I told him that is what my intention was, and continued to receive perfectly edible fruits and vegetables for free without ever having to step foot in a dumpster. From that point on, food waste became a minor obsession for me. During my ethnographic fieldwork, I spent December 2011- March 2012 conducting my own dumpster dives in addition the data collected from participants; my goal was not necessarily to see if I could live only from food salvaged from the waste stream, but I wanted to get more acquainted with the feeling of living in an alternate reality of the hidden economy and marginalized, borderline illegal activities. As stated in my foreword, I became so entrenched in my alternate reality that as I learned to suppress my gag response in the face of opening and picking through dumpsters. I began to feel uneasy in the most hygienic of establishments: restaurants, grocery stores, as my stomach churned with guilt as I began to uncover their waste and the reasons the waste continued.

The snowball survey technique was employed for reaching participants, and began at the Alternative Library (AL). The AL is both a library open to the public, a recycled goods network/cooperative, as well as a low-income housing unit. The library is open on the weekday, from 2 P.M. to 7 P.M. In addition to being a library, it is also home to a number of residents. The AL attracts an eclectic crowd, everyone from freegans to homeless folk, to ex-prisoners, and a variety of sub-cultures that dissociate from mainstream, capitalist America. The AL also engages in a number of freegan activities to benefit the community: Books for Prisoners, free donation-based events (book signings and readings, cooking for Food Not Bombs every Friday). Food Not Bombs (FNB) is one of the main reasons I decided to start my research at the AL because all of the food for FNB comes from donations. The Food Bank donates to this cause, but members of the AL that engage in dumpster diving also make contributions to the cause. This may be one of the best uses for dumpster diving since a lot bulk items nearing expiration are found in the dumpster, and it can often be quite difficult for the diver to consume such large quantities. Although dumpster diving is mostly associated

with homeless populations in much of the United States, many college students are now partaking in this activity (Weismann 2011).

For a few months I participated in my own case study. Not until I heard myself saying, “I was standing in line at the grocery store last night and felt bad; why should I buy this food when there’s perfectly good food in the dumpster out back?” did I realize my perspective, my reality, had shifted. As anthropologists, we cannot simply look at one aspect (as I originally wanted to focus on the Paleolithic diet and nutrition of dumpster diving), but instead we must take a holistic approach to what we are studying: who are thesis participants? With which demographic and/or sub-culture do they identify? What perspective allows this subculture to accept the opposite of everything we have been taught in mainstream America about cleanliness, germs, and the very definition of trash? And from the point of view of my participants, as well as me, how do we define or redefine trash? Does a food devoid of economic value due to expiration date then become immediately devoid of nutritional value as well? It became evident that evolutionary facts can answer these questions. Simple evolutionary cues allow urban foragers to decipher edible from inedible: rotten, spoiled or simply bruised and in need of a quick wash?

Evolution also plays a major role in conspicuous consumption: the ability as 21st century capitalistic Americans to buy what they want and need because they work for it and have the money; a modern day display of wealth. Just as many Americans argue against a more socialist medical system in which everyone would receive equal medical treatments regardless of bank accounts, food from the dumpster forces people to relinquish the privilege of choice and succumbing to whatever may be found that day in the dumpster. This is a circular argument though, as there would be no abundance of food found in the dumpster if it were not for capitalism and display of opulence. Foods found in the dumpster are plentiful, and more often than not edible; but if you are picky or adhere to a specific diet, dumpster diving may not be a viable option. Accordingly, those wishing to display their wealth may have no moral resistance to purchasing too food and wasting a significant amount of it (both at the store level as well as the consumer level).

Entering this alternative sub-culture was not easy. First, I was introduced to a few foragers living in an old Victorian house not far from my own residence. I had seen of the divers, Pete* (*name changed for anonymity), on campus and in town always riding a bike well equipped for dumpster dives. The baskets fastened to the bike were recycled bulk containers. One day I saw Pete, as I recognized him from a YouTube video on dumpster diving and told him about my thesis proposal. He told me to pursue the study, we exchanged numbers and during the next week we arranged to meet for an interview at his house. Upon arriving at his house, he gave me a full tour of the kitchen and food-stuff areas. Almost all of the food in the kitchen, refrigerator, and full-size freezer came from the dumpster. Albeit store bought items (a few avocados and a piece of ginger), the bulk of foodstuffs lining the shelves and refrigerator were from the dumpster.

This is when I learned lesson #1 in dumpster diving: you must be extremely organized and make space for bulk items. Pete showed me the wall of teas from a local company in Seattle: the boxes had been slightly dented; therefore they were deemed trash, with plastic wrap still intact. For about 30 minutes I sat in the kitchen asking Pete questions, he got up often show me the cabinets of point to various foods from the dumpster. After showing me the kitchen, Pete enthusiastically brought me to the back yard to see his dumpster diving shed. He built the shed himself, and it was completely organized and stocked full of both staple foods and luxury items. He even had brown grocery bags in a stack, and sent me home with “groceries”: dog food and a few jars of pickles. My dog loved the Trader Joe’s wet food, something I rarely buy on a graduate student budget. Pete and roommate say there is an “unlimited amount of food”. Variety of food will depend on how frequently you are willing to “dive.” They gave me a tour of salvaged foodstuffs. Almost everything in kitchen came from dumpster, except for whipping cream and ginger. The freezer was fully stocked with dumpster foods. I noted the importance of storage space because large quantities of the same item are sometimes tossed and need to be stored in the appropriate temperatures (i.e. butter, cream cheese, hummus, meats). After the kitchen tour, I was led outside to the shed. An incredibly well organized, fully stocked shed behind their

house that stores overflow/excess of food that they allow friends/etc. to come by and go shopping.

Me: “Are there risks in dumpster diving?”

Pete: “Very rare, but on occasion: one friend locked in dumpster; in larger dumpsters people throwing in large objects that could hurt you.”

I asked Pete if he or any of his roommates were interested in participating in my study, as their house seemed to be a communal setting where all members contributed to the food source and shared what was their spoils. Pete said he would show his roommates my flyer, but seemed disinterested himself in participating. Later on, he kindly declined from having further to do with my study. He also declined any of my advances to go on a dive together.

Thanks to Pete’s suggestion, the following week I found myself at the AL. I called the AL coordinator, Henry*, and set up a time to meet him during operational hours of the AL to hand out and post flyers and for a quick interview. While waiting for Henry, I spent some time looking around the impressive library, organized to a T, all books and other reading materials donated or salvaged. Henry met me, no shoes, big smile, and gave me a quick tour of the AL, during which he was constantly interrupted with questions from other AL residents about the outdoor garden, food prep, and up-coming meetings. He seemed adept at multi-tasking, and it was obvious that he was a major proponent of organizing this alternative community. After the interview, on my way out, Henry enthusiastically posted my flyer among other advertisements on the bulletin board in the foyer. I thanked Henry and told him I would be back during the following weeks to participate in a “Books for Prisoners” fundraiser. Henry suggested that I speak with the subject of an interview recently published in our university’s school newspaper, a local college student who dives. This was my next lead.

I had not seen the article, but after a quick Google search session, I contacted the individual for an interview. Before meeting with Baxter* I looked at his photography website. I was trying to gauge how much dumpster diving played a part in these folk’s lives: was it

their main focus? Were they consumed by it every minute? Did they participate in any mainstream activities? Have I crossed paths with them before? Checking out Baxter's photography scared me: it had blood, nudity, sometimes both, as well photographing normal objects in ways that made them seem corrupt, obscene or profane. But alas, there was no photos capturing the dumpster. So, being a single female, Baxter and I arranged to meet for the interview at a public coffee shop on campus. Baxter turned out to be one of the most genuine, kind-spirited people I have ever met. He was interested in my endeavor, and was more than happy to take me out diving.

Before parting, we exchanged information and made plans to meet within the week for my first dive. Baxter also agreed to be a participant in my study, he filled out a survey and also sent me at least a half dozen lists compiled from his dives. Baxter had been diving for a long time, at least for most of his four years at college, which is why the university paper wrote the article on his activities. We had to move quick because he planned to travel immediately after graduation in December, which only left about a month and a half from the time we met to generate data collection.

11/18/2011: First Dive with Henry

30 lb. bag "Cat Cafe" cat food

2 bags lemons (5 lb. each)

1 cantaloupe

5 lb. jar of artichoke jalapeno dip

2 unsealed bags of mixed greens

Over the following week, I went diving with Grant* whom I had met through Henry at the AL. Grant and his roommate took me to their favorite spots: Cash & Carry, Trader Joe's, Grocery Outlet, Papa Murphy's Pizza, a local bread company/bakery. We took our bikes, brought backpacks, and extra bags (both reusable to carry stuff as well as plastic bags to contain things that needed to be washed). We took trash bags out of the dumpster, opened,

rummaged, and put back what we didn't want. At Trader Joe's the manager came out and told us some divers had just come by and trashed the trash, scattering waste all over and he spent the last hour cleaning it all up. His only request to us was to leave it as we found it, but we were still welcome, surprisingly. We took only what we could carry, and agreed on items we wanted, sharing the treasures: My experience foraging with Grant and roommate proved successful as we all went home with goods. It was a great experience and made new friends. Grant was extremely helpful and excited about the write-up and study. He agreed to participate in my study (all three components: survey, dive list compilation, as well as 10-day diet journal recall).

In December 2012, I traveled down to a small town outside of Seattle to meet a household of bona fide group of divers, all five of which had attended the same Alderleaf Wilderness College together. They had a shed full of freshly dumpstered fruits and vegetables; most of the food in their cupboards and refrigerator were salvaged from dumpsters; and they also had a fresh road kill deer hanging up out back, which was gutted and butchered while I spent a few hours with them. Half of the deer's body was green, but the young man butchering the dead animal just cut that part off. I ate lunch there, a coconut curry soup with deer from the road and all vegetables from the dumpster. Four of the young people I spoke with were planning a one month wilderness challenge in the summer of 2013, and were preparing for this by spending winter months dehydrating road kill meat, working animal hides and making stone tools.

A big part of their lifestyle was the ability to have free time to do what they wanted and live freely without the strain and stress of conventional, capitalist society by getting most of their food for free and paying minimal rent. When we sat down to eat lunch together, we all laughed because I was sitting at the end of the table, and seemed to be the isolated anthropologist/research studying everyone from afar. In a time when most young folks in their 20's are attached to their cell phones and are so concerned with following the path of the capitalistic ideal of economic success, it was not only refreshing but humbling to share a meal with a group of people that had foraged, prepared food and then offered it to a complete stranger, all the while they were engaging and genuine in conversation as well as their

invitation for me to come back whenever I pleased. After thanking everyone and heading back north, I stopped in the nearest town for a quick coffee, and again felt that uneasy feeling resurfacing in pit of my stomach, and no, it was not the delicious dumpstered lunch I had just finished. It was the packaging and waste involved in having a cup of coffee; it was the loneliness of consuming without others to share in the experience and the sheer out-of-touch with human connectedness experienced as I was in the coffee shop I exchanged currency for a consumer need to be satisfied. Again, my two worlds collided: that of the alternate reality of being aware of waste and the fact that it is the 21st century, and this is the world we have created.

My ethnographic fieldwork illuminated the role of an anthropologist, a researcher, and his/her relationship to the participants in the field. Although I did not travel to another country, I spoke the same language as my participants/ informants, I wore similar clothes, lived nearby to many of them; but the fact that I wanted to research dumpster diving before being a seasoned diver created a lot of hesitation with many of the folks that responded to my recruitment posters. Many people wanted to know why I was conducting this research, would it be published, was I going to tell everyone what dumpsters should be locked; basically, there was a suspicion of the researcher.

Chapter Six: Discussion

To review, the intent of this research was to generate a model for future researchers seeking to quantify calories from food waste in order to question why we, as Americans, continue to waste edible, nutritionally viable foods. The mainstream consumer perceives trash in terms of hygienic boundaries, and the line of demarcation separating edible from inedible is ambiguous. The history chapter outlined how perceptions of hygiene, waste collection and food shifted greatly from the Industrial Revolution to 2012; parallel to the expansion of these industries, the medical field experienced exponential advances that led to more awareness of health in general, specifically with a great attention to germs. The chapter on the theory applied structural violence to food waste and offered a connection between the current standards of cleanliness and hygiene and how these norms are reinforced in via political bodies. In terms of dumpstered foods, Structural Violence illuminates the need for a more critical view of the current food waste stream, food production in America, and the power structures that stigmatize marginal populations and marginal activities. By applying an anthropological lens to the food waste stream, the combination of quantitative (demographic survey) and qualitative data (dive list compilations and food diet journal) connects the topic of people eating America's wasted food to the larger socio-political structures of social justice, policymaking, legality issues, food standards, and health standards (Lindemann 2014; Nestle 2013; Donovan 2012). Overall, I conclude that more data is needed to produce adequate representations of food accessed from the waste stream and consumed in order to shift the perceptions of mainstream standards of food quality, aesthetics, and safety.

My results echoed the existing literature on dumpster diving: people can and do eat out dumpsters. My ethnography and small sample study demonstrated that types and amounts of food were sporadic and inconsistent, but it adds up on a national scale. The following questions drove this mixed methods study: What percentage of total caloric intake is from dumpster? How much can one take? How often do they dive? Who (or which demographic) eats discarded food? Regardless of their motives (political/economic, as described in analysis and limitations chapter), participants in this study gave me a genuine and authentic look into

eating discarded food found in a dumpster via surveys, compiling dumpster dive lists and completing 10-day diet journals. My participants did not get sick. They were not asked to report whether or not they got sick, but many people willingly (as aligns with much of the supporting academic literature as well as current public media) told me that the only time they had food sickness was from prepared food at restaurants. This could be attributed to the fact that food that smells rotten or appears completely inedible is generally not taken from the dumpster, and oftentimes prepared food at restaurants may harbor salmonella but look completely edible.

Dumpster diving, in terms of current cultural norms, is a socially unacceptable avenue of procuring food, as eating discarded waste is conventionally viewed as a violation of social norms (Fernandez 2011; Rush 2006). Many people would think to eat out of a dumpster is not only disgusting, but also impossible way to feed oneself. Although the participants in my study (as well as many of the people I spoke with during and after the research) were students, this research serves to create a more whole picture of the edibility, variability, viability and nutrition thrown away daily in America. Thus this small case study supports the existing literature that America continues to uphold a very high discrimination threshold of food quality and aesthetics (as well as foods bought in bulk, or imperfect packaging) (Pimental 1990). Who is more responsible for the upkeep of these standards: the supplier or the consumer? On a commercial level, both are equal contributors: The supplier loses business if food quality does not meet that of its competitors or the consumers' demands.

As stated in the limitations section, my sample size was statistically insignificant. Snowball sampling connected me with at least 50 contacts (people in the area who participate in dumpster diving), but few people were actually willing to participate. This study was intended to be small due to lack of external funding and/or financing; accordingly, participants were not offered any type of compensation for their participation, which may have been a major deciding factor for folks volunteering their time on this project. One could argue another reason for lack of participation, which does not reflect the number of people contacted via snowball sampling, could be attributed to the fact that stigmas associated extracting food from within a dumpster conjures illegality and social unacceptability (Wingo

1997). This is significant as it seemed that not many people were willing to come forth to participate in even the anonymous, short survey that provided background information on people choosing to dumpster dive.

Additionally, my results proved that although my participants and informants shared traits with freegans, only one participant self-identified as a freegan. Eikenberry and Smith (2005) concluded that more information was needed on the ways in which people, specifically low-income, access food whether those avenues of procurement are socially acceptable or unacceptable. Therefore, I argue that there is more than one specific demographic eating from dumpsters in the U.S. Inquiry into different populations could be beneficial for understanding the breadth of edibility of what is discarded (Geiger 2006). Extraction of data from the dive list compilation analysis demonstrates that not only is food wasted, but also a significant portion of the wasted food is fruits and vegetables, precisely the foods that lower socio-economic status individuals may have difficulty accessing.

Presumably, one could argue a second point for the unwillingness to participate in this study: People are not willing to expose either their resources or their identification. Even though names were changed, but folks were weary to participate. Most of my contacts were eager to tell me where to find the best spots in town; it did not seem like they were holding back information on how to go about recycling a highly wasted resource. Information regarding dumpster and individuals dumpster diving may have been withheld in an effort to keep research from exposing resources. In Bellingham, my case study emphasizes the trifecta of the grocery stores my participants and me frequented (Grocery Outlet, Cash and Carry & Trader Joe's). However, these may be the easiest to access for a beginner like myself, and therefore other stores such as Costco or Haggen, were not mentioned.

Furthermore, this research brought new insight to the topic of food waste because of the research site, Bellingham. Due to the large college population and open-minded atmosphere of the town, we assume that dumpster diving may be more tolerable here than in big cities. For example, the liberal attitude that emphasizes sustainability in Bellingham may contribute to the acceptance of this activity whereas in other social spheres dumpster diving

is perceived as illegal and looked down upon. According to my theoretical framework, one could also apply structural violence to the fact that perhaps store owners and/or employees are more willing to look the other way when young, well-spoken, courteous white college kids pick through their trash: “As long as you leave things the way you found them,” the manager at Trader Joe’s politely expressed to the participants and the researcher of this study; but it is interesting to stipulate on what his reaction have been if we were members of a different demographic profile (ethnographic fieldwork, November 2011). If my participants, or I, were of a different race, age, mental ability, we may have encountered a more hostile environment while digging through trash late at night within the locked private property of large-chain grocery stores. This highlights both social power and agency of affluent college-aged adults, who can generally afford to eat and buy groceries; on the contrary, access would very likely be denied to someone that is homeless, without means to buy food.

Sampling in Bellingham and Alternative Library excluded homeless dumpster divers. The abundance and quality of social food assistance in Bellingham biases may account for a smaller demographic of homeless and very poor dumpster divers. Other areas with larger demographic differences and less social assistance programs might include a larger proportion of very poor and homeless people as part of the dumpster diving population.

The research site of Bellingham, WA, is unique to most other research projects concerning dumpster diving because of this small town’s commitment to sustainability. But if the city is so focused on conservation and redistribution, why does source of food matter? Generally, that depends on health code rules and regulations. For example, fresh produce from the post-harvest on local farms is redistributed to our FB and then to other FB’s in the region; but if Bellingham is committed to feeding its hungry why does edible food, accessed and documented by my participants, it is curious that food continues to end up in the trash. Furthermore, more incentives for local food business and large grocery chains to donate wasted food may encourage these commercial establishments to avoid the prevailing behavior of placing food in a dumpster as a matter of convenience.

The research site of Bellingham, WA is not a food desert. The literature presented in Chapter 3 on food desert research illuminates the fact that hunger still exists in America, but how it manifests itself is in some ways new. To recap, America is faced with hunger in terms of food insecurity (inconsistent access to food on a daily basis) as well as hidden hunger (over consumption of empty calories without adequate vitamins and minerals). The surrounding the city of Bellingham is Whatcom County, much of which has been designated as food deserts. But, a food desert is defined by means of distance in order to access to food (grocery stores within 25 miles), and access to food is defined by what kind of store is available selling food; the definition does not take into account farmland, such as all of the agricultural community residing and working in Whatcom County. Therefore, I argue that the definition of a food desert needs to be more specific: if people own farms, grow their own food, and are able to provide for themselves, this should be taken into account in food desert mapping.

As stated in the introduction, a number of gleaning programs and businesses have been implemented nationwide in an effort to rectify the amount of food wasted as well as to salvage food that is considered wasted. Examples include Grocery Outlet, and Farm to Family Program in California. Grocery Outlet is a chain of 148 stores, they redistribute food from the post-harvest phase of the food supply chain, selling close to expiration or already expired foods, bulk foods, and produce that is also close to expiry. In addition to low-cost grocery stores, the local chapter of food salvaging programs includes the Bellingham Food Bank, which is the largest in the county and which redistributes over 500,000 pounds of food a year to over a dozen other food banks in Whatcom County (see Appendix IV for description of programs). Gleaning programs are a great way to legally salvage food donated from distribution centers as well from the post-harvest from farms, allowing for edible food to be redistributed while avoiding the dumpster.

After connecting with individuals to start research, I chose to volunteer with the community that redistributes some of Bellingham's salvaged food waste. I volunteered a few times with the Alternative Library to help prepare the Friday Food Not Bombs meal. This was a great experience to see the amount of food salvaged and donated and made into

delicious offerings. Over the summer of 2012 I began participating in farm gleans hosted by the Small Potatoes Gleaning Project, a division of the Whatcom County Food Bank. To glean is to salvage the post-harvest crop that the farm is no longer willing to sell, and therefore they choose to donate if volunteers supply the manual labor of harvest the excess crop. These gleans use the help of local volunteers to do the post-harvest of crops that are still edible but did not make it to the market and had not yet been put in a disposal container or allowed to remain neglected in the fields, and those fruits and vegetables are then donated to the Food Bank. I was interested in working with the gleaning project as an extension of my thesis research to see what other options of free food there was around our city. According to the coordinator of this program, the biggest problems facing the Bellingham Food Bank is not lack of food, but actually the abundance of food and lack of infrastructure to properly distribute the leftover crops. Additionally, when I told the coordinator that students would probably be interested in volunteering, he said that college students are on the emailing list but never actually come to any gleans.

Gleaning, Food Banks, and low-cost grocery stores create an avenue for viable, acceptable food redistribution, but they do require infrastructure and logistics planning. While speaking with the coordinator of one of the local Whatcom County food redistribution programs about the lack of infrastructure to move food, he told me that he used to volunteer a great deal of his time driving around and picking up leftover food from restaurants and grocery stores because he could not bear to see it put into the waste stream when it could still be eaten (June 2012). Eventually, due to professional commitments, as well as money and time constraints, he was no longer able to volunteer both his time and gas money to provide this free service. Therefore, a system for collecting food from restaurants and stores is essential.

A system that avoids the stigma of eating from a dumpster and allows for open access to food that can still be consumed by humans although it may not be worth selling in the grocery store, with no cost to the business entity tossing it, would be beneficial for everyone (except maybe the trash industry). This, of course, would be hindered by the fear of liability. I offer the following as a solution: stores could put a disclaimer on their open-access bins,

“Consume food from dumpsters at your own risk.” Not only would this fit into the norm of convenience for stores unwilling to donate, but I think it would also invite store employees, managers and owners to develop their own curiosity about everyday food waste: what keeps us from selling food that people are still willing to eat? Is there still value left in some of it?

Lastly, this case study demonstrated an important theme: dumpster divers have some set of cultural standards to which they adhere whilst salvaging food from the waste stream. This signifies that across the board, whether mainstream or counterculture, food choice is both deeply embedded in evolutionary taste as well as cultural standards. Although dumpster divers are able to go beyond mainstream, conventional beliefs of hygienic standards and the acceptable norms of procuring food, the fact that nutrition and general evasion of processed foods greatly influences the choices of dumpster divers has resounding implications on food choice and the future of food sovereignty.

Conclusion

To conclude, food waste is rooted in market-driven capitalism and the social hierarchy that begets consumerism: both in terms of supply and demand (those with purchasing power control products, prices and standards), as well as in terms of waste (waste collection is a multi-million dollar agency). Today, on a nation level, landfills remain the number one place for food that is no longer regarded with value in the consumer market. The aim of this research, generating quantitative data to supplement existing qualitative literature in terms of food waste and consumption, is an effort towards shifting the cultural norm of food waste in America and more importantly lessening the stigma of avoidance when food no longer aligns with the current standards of food hygiene and freshness.

Evolution also plays a major role in conspicuous consumption: a modern-day display of wealth is the 21st century capitalistic Americans' ability to buy what they want and need because they work for it and have the money (Ulver and Ostberg 2014). Just as many Americans argue against a more socialist medical system in which everyone would receive equal medical treatments regardless of bank accounts, food from the dumpster forces people to relinquish the privilege of choice and succumbing to whatever may be found that day in the dumpster. This is a circular argument though, as there would be no abundance of food found in the dumpster if it were not for capitalism and display of opulence. Foods found in the dumpster are plentiful, and more often than not edible; but if you are picky or adhere to a specific diet, dumpster diving may not be a viable option. Accordingly, those wishing to display their wealth may have no moral resistance to purchasing too food and wasting a significant amount of it (both at the store level as well as the consumer level).

As presented earlier in the paper, the literature on the subject of dumpster diving, particularly in anthropology, focuses on qualitative studies recounting people's stories of dumpster diving. Qualitative data that represents all voices of the dumpster diving community, although freegans make up the majority of the studies' population. Therefore, there is limited knowledge of data regarding actual consumption of dumpstered calories,

which is necessary for food-regulating governing bodies to shift away from the stringent rules that create the excessive amounts of food waste.

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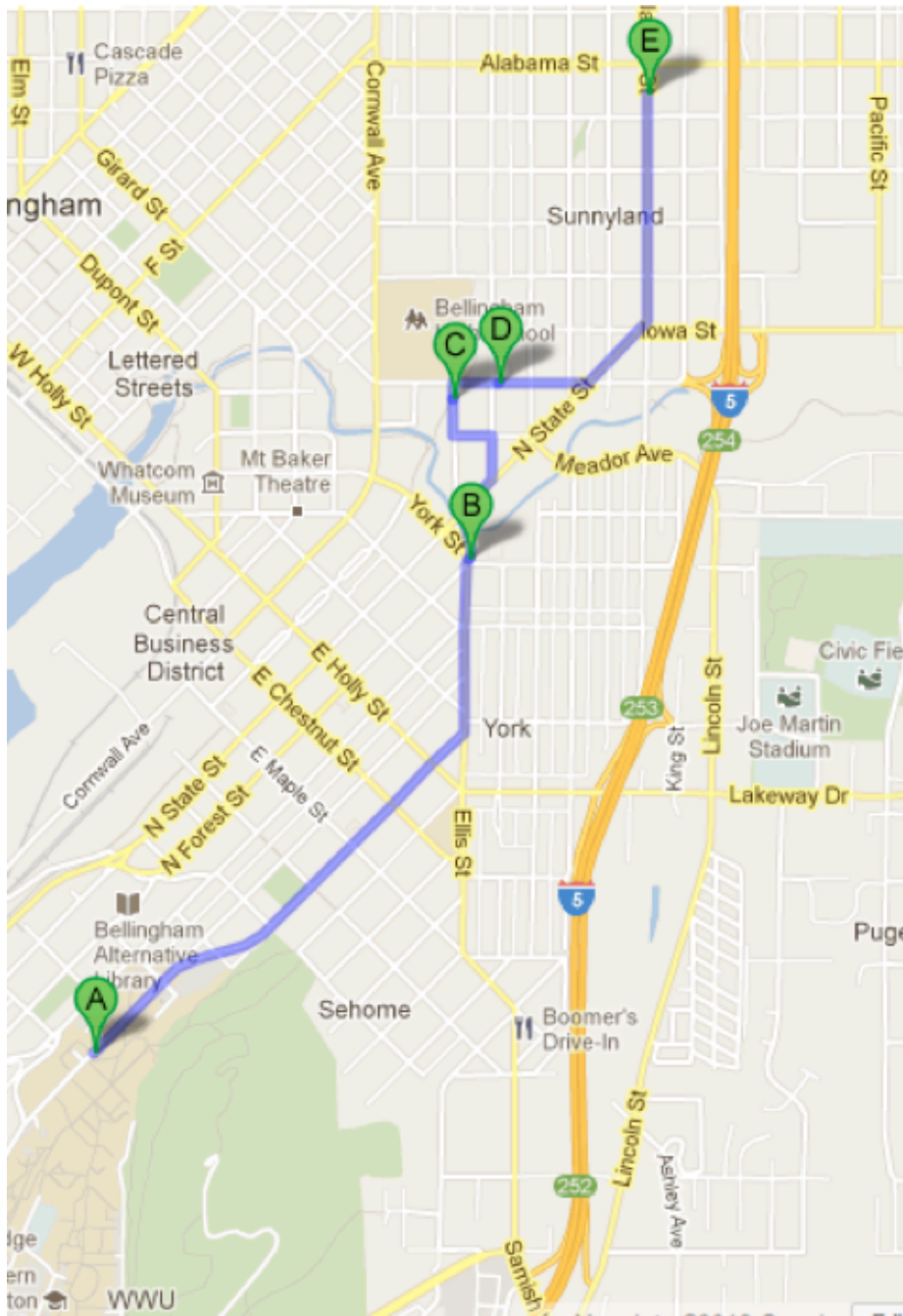
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Appendix I: Research Site



Appendix II: Survey

Please circle the following:

1. Your age group:

18-25 yrs. 26-30 31-35 36-40 41-45 46-50
51+

1. Male Female

2. Employed Not employed

1. : Why do you dumpster dive?

(a) feed yourself

(b) feed others:

1) family members

2) food bank

3) friends

(a) To salvage wasted foods

(b) To expand food options

(c) In order to trade for other things

(d) For adventure

(e) Other

(h) Political reasons such as:

1) Free-ganism

2) Food Not Bombs

3) Environmentally conscious

4) Hate food waste

5) Other

1. Do you live with others that also dive? Yes No

1. Please circle any of the following groups that you identify with:

2. Food not Bombs Hippies Low-Income Student

Environmentally-Aware Parent Health-Conscious

Freegan Vegetarian

7. Do you consume recovered animal protein? This includes any meats, fish, or poultry.

8. If you answered yes to question 7, how often do you eat animal proteins from your dives?

9. Is there anything that you would like to add that is not covered above (such as specific foods you like)?

Appendix III: FDA DIETARY FOOD PYRAMIDS

US FDA FOOD PYRAMID: Food Plate 2012, top; previous guidelines, below



<http://theprodigalscribe.com/food-pyramid/>

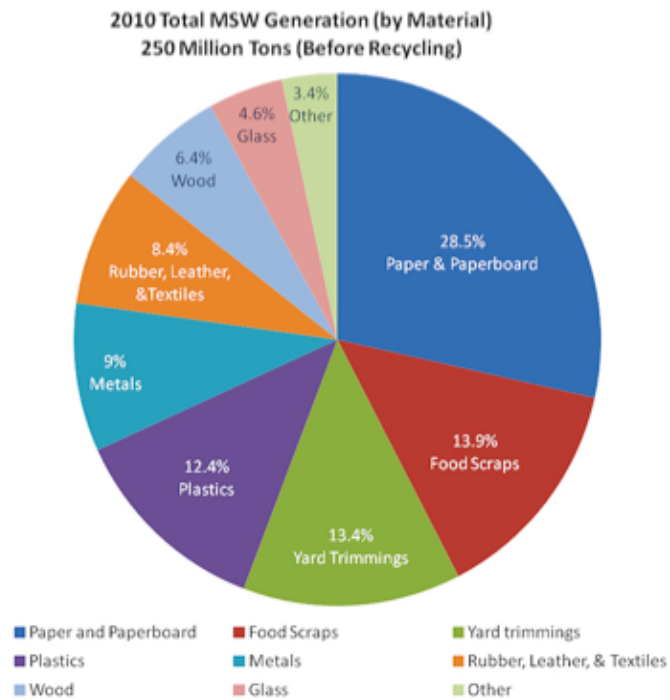
Appendix IV: Gleaning programs in Whatcom County

- The Bellingham Food Bank Programs from http://bellinghamfoodbank.org/our_programs:
- Food Bank Farm: grows more than ten tons of locally-grown, fresh, organic produce each year for food bank families.
- Food to Bank On
- Small Potatoes Gleaning Project: works with local farms to recover vegetables that would be plowed back into the ground. Volunteers glean more than 50,000 pounds of produce each year and deliver to more than 20 food banks and feeding programs across Whatcom County.
- Garden Project: enlists volunteers to build small, raised-bed gardens for low-income individuals and families. We provide all the necessary materials, and these gardens generate great food and so much more.
- Victory Gardens: Our Victory Gardens program encourages home gardeners to donate surplus produce to Bellingham Food Bank. Each year our clients benefit from more than 15,000 pounds of Victory Gardens donations.
- MilkMoney: Almost 35 percent of food bank clients are children, and fresh milk is an essential component of growing children's diets. Our Milk Money program enlists groups to help raise some of the funds needed for monthly milk purchases.
- Food4Tots: This program enlists sponsors to collect baby food or funds to purchase baby food, to ensure that our smallest and most vulnerable clients will be fed.
- Just Food CSA
- Friendship Community Garden
- Bellingham Urban Garden Syndicate (BUGS)

Appendix V:

Image 1: Total municipal solid waste in U.S.

Image 2: Flow chart from Parfitt et al. (2012:2077), statistics from UK.



<http://www.epa.gov/osw/conserve/materials/organics/food/fd-basic.htm>

Appendix VI

Dive Compilation Lists : Each table represents a different dive data

Coding Key			
Vegetables	Fruits	Dairy	Protein

Individual S.B.

November-December 2011

one gallon thing of giardiniera pickled veggies	5 lb bag of limes, a big bag of mixed greens
6 hearts of romaine	2lb bag of green onions
a bunch of bottles of sangria that i later found out was non alcoholic	small carton of vanilla soymilk
a bunch of little cream cheeses that i tossed	can of nonstick cooking spray

I found 5 large cheese pizzas on Friday
Magic bullet blender at Grocery outlet

3 lbs potatoes	12 zucchini
3 lbs apples	2 lbs carrots
4 lemons	9 quarts Bolthouse Vanilla Chai
6 oranges	24 cans Shasta diet grapefruit soda,

18 avocado	25 lb bag powdered sugar,
24 x 12oz welch's OJ	1 30 g carton flan (raw)
	big tube (half gal?) of smart balance spread

Individual G.G.

11/22/2011:

Cash n Carry:	
3lbs white mushrooms	1 eggplant
4 heads romaine lettuce	1 russet potato, and one very waterlogged dumpster diver.
20 tangerines	

Written on Dive Compilation List: *"there was more of everything, just took what we could."*

11/23/2011:

3 pascilla peppers	3lbs cream cheese
5lbs frozen green beans	7 pizzas
48 eggs	5lbs of brownie
20 lbs cornmeal	2lbs rice krispies
13 limes	41 tomatoes

7 tangerine	
-------------	--

Papa Murphy's:	
6 med pizzas	
1 small pizza	
13 oz salad	

Cash and Carry	
5 lbs mushroom's	2 lemons
4 cases CapriSun (10 each)	8 limes
2 lb mozzarella	4 clementines
6 lbs frozen pork sausage	10 lb bag mandarin oranges

12/4/2011:

6 cans diet coke	5 carrots
5lbs apples	3lbs radishes
3 potatoes	6lbs romaine lettuce
14 zucchinis	2lbs spinach

1lb mixed greens	1 avocado
6 sandwich rolls	

12/15/2011

Fairhaven market (during store closing week)	
Virginia slims-menthol 25 packs + 5	12 apples
Snuff/chew 126 cans	3 oranges
3 extension cords	1 lb. bag dried pineapple
ipod headphones	5 yams
4 tape	8 jalapenos
stamp squash	5 carrots
bagel crisps 1 bag	Cucumber
polyester gloves	1 bag shredded cheese (2 cups)
berry flavored sparkling water	8 pure blue vitamin juices 12 oz each
1/2 gal soy milk	Approx. 5 lbs salt water taffy candy
sparks 1	approx. 5 lbs caramel taffy candy
1 box Tazo™ tea	12 oz bottle chai tea
vinaigrette	stapler with/staples
big roll cellophane	

Ethnographic Field Work: Researcher's Personal Dive Lists ¹⁹

11/18

30 lb. bag "Cat Cafe" cat food
2 bags lemons (5 lb. each)
1 cantaloupe
5 lb. jar of artichoke jalapeno dip
2 unsealed bags of mixed greens

Dec 12, 2011

12 pineapples	3 eggplant
12 tomatoes	many bunches cilantro

1/22: Quick dive/drive because I have the flu

5 lb. bags shredded iceberg lettuce (expiration 1/22 day of dive)	did not recover (wet/too far to reach..not good reasons)
approx. 50-100 limes	

February 2012:

Theo's Chocolate in Seattle: Video of entire dumpster dedicated to discarded chocolate trimmings, etc.

¹⁹ *Not included in analysis, not coded

Appendix VII

MyPyramid

S. B. | All Days

Male

Age: 21 Yrs.

Height: 5 ft. 11 in.

Weight: 140.00 lb.

Very Active

BMI: 19.53



My Pyramid - Intake vs Recommendation

3200 Calories Pattern

Group	Percent of Rec.	Comparison	Amount (Daily)
Grain, Total Intake	79 %		7.88 oz equivalent
Grain, Total Recommended			10 oz equivalent
Vegetable, Total Intake	100 %		3.99 cup equivalent
Vegetable, Total Recommended			4 cup equivalent
Fruit Intake	115 %		2.87 cup equivalent
Fruit Recommended			2.5 cup equivalent
Milk Intake	29 %		0.87 cup equivalent
Milk Recommended			3 cup equivalent
Meat & Beans, Total Intake	85 %		5.96 oz equivalent
Meat & Beans, Total Recommended			7 oz equivalent

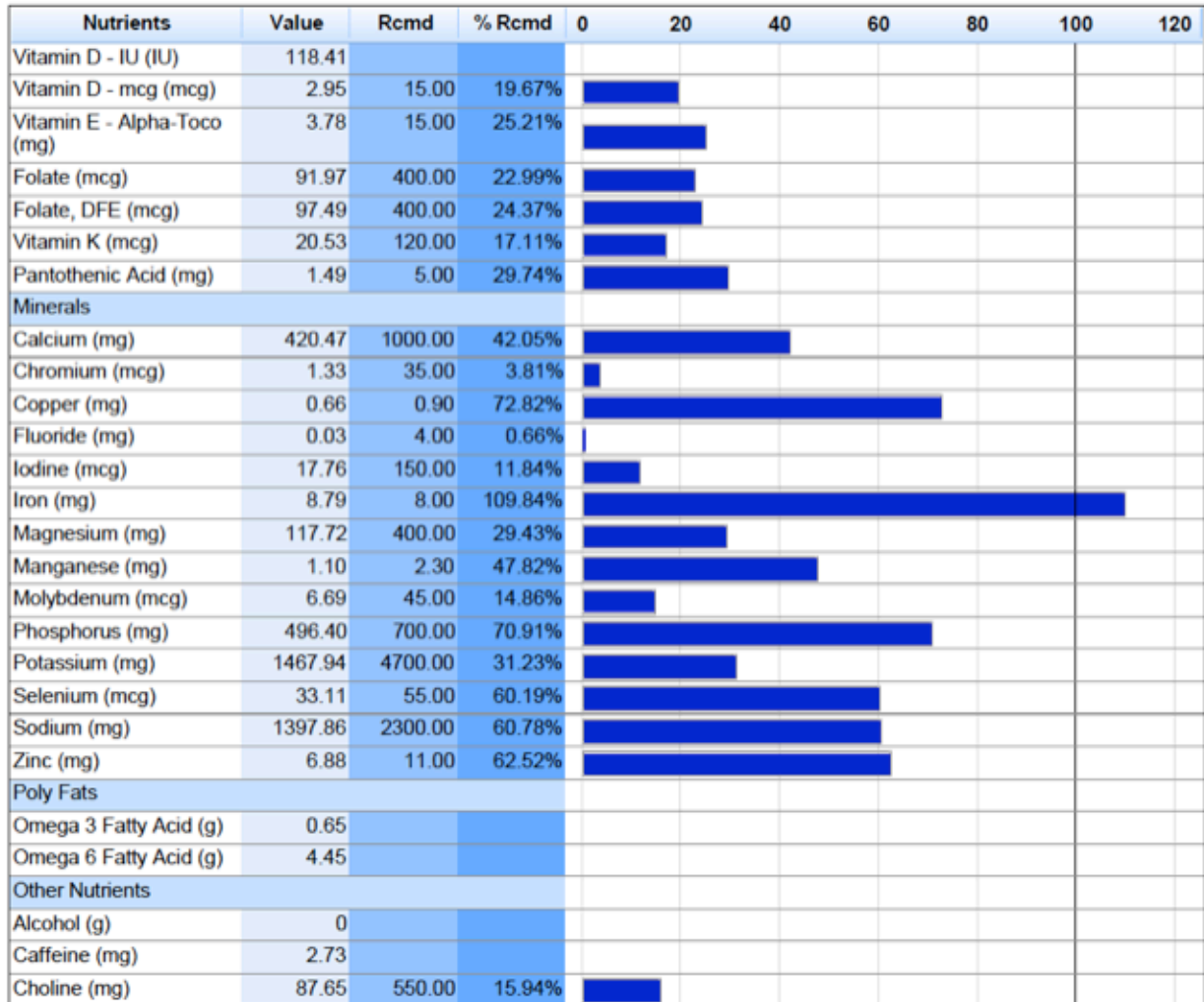
Person: S. B. | All Days

Multi-Column

Nutrients	Value	Nutrients	Value
Basic Components		Biotin (mcg)	11.61
Gram Weight (g)	3392.96	Vitamin C (mg)	131.13
Calories (kcal)	2705.71	Vitamin D - IU (IU)	64.71
Calories from Fat (kcal)	927.67	Vitamin D - mcg (mcg)	1.60
Calories from SatFat (kcal)	282.49	Vitamin E - Alpha-Toco (mg)	6.33
Protein (g)	92.60	Folate (mcg)	361.00
Carbohydrates (g)	328.02	Folate, DFE (mcg)	307.23
Dietary Fiber (g)	43.72	Vitamin K (mcg)	236.52
Soluble Fiber (g)	4.53	Pantothenic Acid (mg)	3.29
Total Sugars (g)	102.29	Minerals	
Monosaccharides (g)	12.73	Calcium (mg)	917.34
Disaccharides (g)	6.60	Chromium (mcg)	2.05
Other Carbs (g)	145.74	Copper (mg)	1.44
Fat (g)	103.07	Fluoride (mg)	0.29
Saturated Fat (g)	31.39	Iodine (mcg)	12.61
Mono Fat (g)	10.94	Iron (mg)	15.80
Poly Fat (g)	5.60	Magnesium (mg)	245.13
Trans Fatty Acid (g)	0.86	Manganese (mg)	11.00
Cholesterol (mg)	183.26	Molybdenum (mcg)	23.43
Water (g)	1906.70	Phosphorus (mg)	654.30
Vitamins		Potassium (mg)	2142.42
Vitamin A - IU (IU)	22703.79	Selenium (mcg)	45.81
Vitamin A - RAE (RAE)	1159.92	Sodium (mg)	4405.95
Carotenoid RE (RE)	2137.19	Zinc (mg)	5.70
Retinol RE (RE)	91.33	Poly Fats	
Beta-Carotene (mcg)	11561.35	Omega 3 Fatty Acid (g)	0.55
Vitamin B1 (mg)	0.90	Omega 6 Fatty Acid (g)	4.35
Vitamin B2 (mg)	1.35	Other Nutrients	
Vitamin B3 (mg)	11.66	Alcohol (g)	25.31
Vitamin B3 - Niacin Equiv (mg)	16.30	Caffeine (mg)	153.69
Vitamin B6 (mg)	0.93	Choline (mg)	122.90
Vitamin B12 (mcg)	2.49		

Person: G. G. | All Days

Bar Graph cont.



Person: G. G. | All Days

MyPyramid

G. G. | All Days

Male

Age: 22 Yrs.

Height: 6 ft. 1 in.

Weight: 150.00 lb.

Moderately Active

BMI: 19.79



My Pyramid - Intake vs Recommendation

3100 Calories Pattern

Group	Percent of Rec.	Comparison	Amount (Daily)
Grain, Total Intake	28 %		2.78 oz equivalent
Grain, Total Recommended			10 oz equivalent
Vegetable, Total Intake	32 %		1.26 cup equivalent
Vegetable, Total Recommended			4 cup equivalent
Fruit Intake	74 %		1.85 cup equivalent
Fruit Recommended			2.5 cup equivalent
Milk Intake	17 %		0.52 cup equivalent
Milk Recommended			3 cup equivalent
Meat & Beans, Total Intake	93 %		6.52 oz equivalent
Meat & Beans, Total Recommended			7 oz equivalent

Western Washington University
Consent to Take Part in a Research Study
Project: Dumpster Diving: Deconstructing the Boundary that Outcasts Contemporary Foragers

You are invited to participate in a research study conducted by Irena Lambrou, graduate student from the Anthropology Department at WWU. The purpose of this research is to document food items recovered through dumpster diving and to analyze the nutrient density of what is being consumed from recovered foods.

If you decide to participate, you understand that the following things will be part of the research.

- 1) Participation will involve a 10-day voluntary participation of keeping a food journal, as well as allowing access to food storage areas for Irena Lambrou to document over a two month period between Nov 2011 and June 2012. Irena Lambrou will provide you with the food diet journal charts, as well as writing utensils.
2. There are no anticipated risks or discomfort associated with participation.
3. There is no direct benefit to you for participating in this study. One possible benefit to those participating in this research may be a better understanding of the nutrient density from recovered foods.
- 4) All information documented in ethnographic field notes will use pseudonyms for any persons participating.
- 5) Photography of myself and others will not be used. If participants do not want the researcher to use a particular photo documenting recovered food, even after signing this waiver, the researcher will respect those requests and choose not to include the photo(s).
- 6) My participation is voluntary, I may choose not to answer certain questions or withdraw from participation at any time without penalty.
- 7) All information is confidential. My signed consent form will be kept in a locked cabinet separate from the questionnaires. My name will not be associated with any of my responses at any time. My name will not be associated with any of my responses at any time. If preferred your name will not be associated with the research, but individuals partaking in the experiment do have the option to use their real name if they so choose. Irena Lambrou will contact those involved before potential publication to confirm anonymity.
- 8) My signature on this form does not waive my legal rights of protection.
- 9) I am at least 18 years of age.
- 10) This experiment is conducted by Irena Lambrou. Any questions that you have about the experiment or your participation may be directed to her at 404-345-4432.

If you have any questions about your participation or your rights as a research participant, you can contact the WWU Human Protections Administrator (HPA), (360) 650-3220.

If during or after participation in this study you suffer from any adverse effects as a result of participation, please notify the researcher directing the study or the WWU Human Protections Administrator.

I have read the above description and agree to participate in this study.

Participant's Signature Date

Participant's PRINTED NAME

NOTE: Please sign both copies of the form and retain the copy marked "Participant."

EX12-17

WESTERN WASHINGTON UNIVERSITY
Office of Research and Sponsored Programs

MEMORANDUM

TO: Irená Lambrou
Anthropology Department, MS 9083

FROM: *Janai Symons*
Janai Symons, Research Compliance Officer, Office of Research and
Sponsored Programs

DATE: 11/14/11

SUBJECT: Human Subjects Review – Exemption Approval

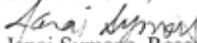
Thank you for submitting a human subject research exemption request for your research project EX12-017, "Dumpster Diving: Deconstructing the Boundary that Outcasts Contemporary Foragers", for review by the Human Subjects Review Committee (HSRC). The HSRC has reviewed the materials you submitted and found the project described falls into Category #2: research involving survey or interview procedures.

If the involvement of human subjects changes over the course of the study in a way that would increase risks, please submit a revised protocol. If you have any questions, please feel free to email me at janai.symons@wwu.edu.

Cc: Sara Weir

**WESTERN WASHINGTON UNIVERSITY
Office of Research and Sponsored Programs**

MEMORANDUM

TO: Irena Lambrou, Anthropology Department
FROM:  Janai Symons, Research Compliance Officer, Office of Research and Sponsored Programs
DATE: 1/23/2012
SUBJECT: Human Subjects Review – Exemption Research Approval

Thank you for submitting a research modification request regarding your human subject research EX12-035, "Deconstructing the Boundary that Outcasts Contemporary Foragers", for review by the Human Subjects Review Committee (HSRC).

Approval: The HSRC has reviewed the materials you submitted and found the project described falls into Category #2: research involving survey or interview procedures. Although the research qualifies for exempt status, the investigators still have a responsibility to protect the rights and welfare of their subjects, and are expected to conduct their research in accordance with the ethical principles of Justice, Beneficence, and Respect for Persons, as described in the Belmont Report, as well as with state and local institutional policy. All students and investigators collecting or analyzing data must be qualified and appropriately trained in research methods and responsible conduct of research.

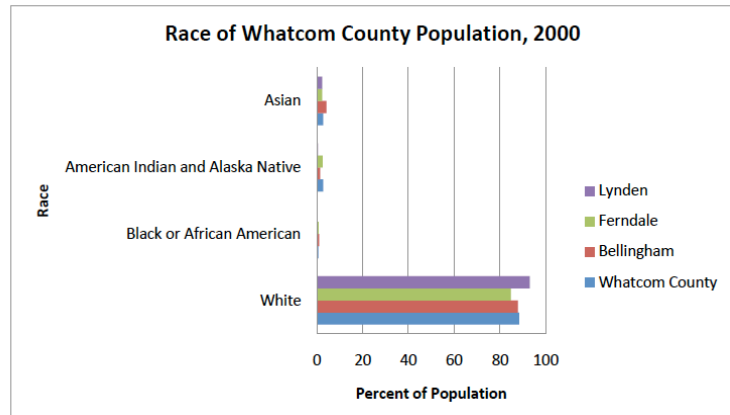
Determination Period: An exempt determination is valid for five years from the date of the determination, as long as the nature of the research activity remains the same. If the involvement of human subjects changes over the course of the study in a way that would increase risks, please submit a revised protocol.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems that may increase the risk to the human subjects and change the category of review, notify the Research Compliance Officer promptly. Any complaints from subjects pertaining to the risk and benefits of the research must be reported to the Research Compliance Officer.

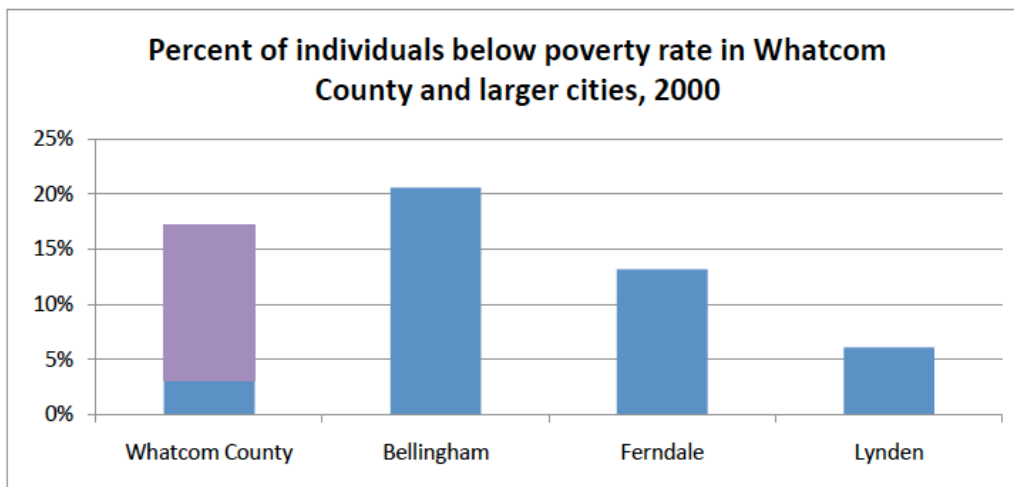
If you have any questions, feel free to email me at janai.symons@wwu.edu.

Cc: Joan Stevenson

Appendix IX



Data from Profile of General Demographic Characteristics: 2000, Office of Financial Management: Whatcom County at: <http://www.ofm.wa.gov/pop/census2000/profiles/county/05053073.pdf> Bellingham data at: <http://www.ofm.wa.gov/pop/census2000/profiles/place/1605305280.pdf> Lynden data at: <http://www.ofm.wa.gov/pop/census2000/profiles/place/1605340805.pdf> Ferndale data at: <http://www.ofm.wa.gov/pop/census2000/profiles/place/1605323620.pdf>



Washington State Employment Security Department. (2010). Whatcom County Profile. Retrieved on April 4, 2010 from <http://www.workforceexplorer.com>

Assessment of Hunger Indicators for Whatcom County, 2008

